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CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS MONTHLY PROGRESS REPORT PERIOD ENDING JANUARY 31, 1994

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REPORT

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS MONTHLY PROGRESS REPORT

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Introduction

The Consent Agreement (CA) As Amended under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Sections 120 and 106(a), the Federal Facility Compliance Agreement (FFCA), and the Federal Facility Agreement for Control and Abatement of Radon-222 Emissions (FFA-CARE) between the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (U.S. EPA) signed September 20, 1991, July 18, 1986, and November 19, 1991, respectively, require that monthly reports be submitted to the U.S. EPA regarding progress made to meet the provisions of those agreements. This report fulfills those requirements by describing actions undertaken at the Fernald Environmental Management Project (FEMP) during the period January 1 through January 31, 1994, and planned actions for the period February 1 through February 28, 1994.

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WORK ASSIGNMENTS AND PROGRESS

Descriptions of work progress are presented in the following sections and/or enclosures to this report:

- CA Section IX - Removal Actions
- CA Section X - Remedial Investigation/Feasibility Study
- Enclosure A - Waste Water Flows and Radionuclide Concentrations under CA Section XXIII.B
- Enclosure B - FFCA: Initial Remedial Measures and Other Open Actions
- Enclosure C - FFA: Control and Abatement of Radon-222 Emissions
- Enclosure D - Drilling/Boring Logs
- Enclosure E - Effluent Radiation Discharges to the Great Miami River

CA Section IX. Removal Actions

This section provides an update of activities associated with the implementation of Removal Actions (RAs) at the FEMP during January, 1994. Information is presented for each of the Removal Actions identified in the Consent Agreement As Amended.

Phase I Removal Actions

- RA No. 1, Contaminated Water Under FEMP Buildings
- RA No. 2, Waste Pit Area Run-off Control - ***completed on August 30, 1992***
- RA No. 3, South Groundwater Contamination Plume
- RA No. 4, Silos 1 and 2
- RA No. 5, Decant Sump Tank
- RA No. 6, Waste Pit 6 Residues - ***completed on December 19, 1990***
- RA No. 7, Plant 1 Pad Continuing Release

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Phase II Removal Actions

- RA No. 8, Inactive Flyash Pile Control - ***completed ahead of schedule, December 23, 1991***
- RA No. 9, Removal of Waste Inventories
- RA No. 10, Active Flyash Pile Controls - ***completed June 29, 1992 - required maintenance will be conducted on an ongoing basis***
- RA No. 11, Pit 5 Experimental Treatment Facility - ***completed on March 20, 1992***
- RA No. 12, Safe Shutdown
- RA No. 13, Plant 1 Ore Silos
- RA No. 14, Contaminated Soils Adjacent to Sewage Treatment Plant Incinerator
- RA No. 15, Scrap Metal Piles
- RA No. 16, Collect Uncontrolled Production Area Runoff--Northeast - ***completed and placed into operation ahead of schedule, August 20, 1993***
- RA No. 17, Improved Storage of Soil and Debris
- RA No. 18, Control Exposed Material in Pit 5 - ***final report submitted to U.S. EPA and Ohio EPA on October 18, 1993***

Phase III Removal Actions

- RA No. 19, Plant 7 Dismantling
- RA No. 20, Stabilization of UNH Inventories
- RA No. 21, Expedited Silo 3 - ***final report submitted to the U.S. EPA on February 24, 1993***
- RA No. 22, Waste Pit Area Containment Improvement - ***final report submitted to the U.S. EPA and Ohio EPA on October 18, 1993***

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CA Section IX. Removal Actions (continued)

- RA No. 23, Inactive Flyash Pile - ***final report submitted to EPA on June 30, 1993***
- RA No. 24, Pilot Plant Sump
- RA No. 25, Nitric Acid Tank Car and Area
- RA No. 26, Asbestos Removals (Asbestos Program)
- RA No. 27, Management of Contaminated Structures at the FEMP - ***final EE/CA was approved June 16, 1993***
- RA No. 28, Contamination at the Fire Training Facility
- RA No. 29, Erosion Control at Inactive Flyash Pile

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Removal Actions

RA No. 1, Contaminated Water Under FEMP Buildings

Removal Action No. 1 was initiated to pump water from piezometers and extraction wells underneath Plants 2/3, 6, 8 and 9. Extracted water is treated for volatile organic chemicals (VOC) and uranium removal at Plant 8 and other existing FEMP waste water treatment facilities before discharge from the FEMP.

During extreme cold weather on January 19, 1994 the VOC Treatment System froze and sustained significant damage. Maintenance and corrective measures are being implemented to return the system to operation. Operations are expected to be re-established in February 1994.

RA No. 3, South Groundwater Contamination Plume

Part 1 - Alternate Water Supply

On January 31, 1991, the U.S. EPA approved the Work Plan for Part 1, Alternate Water Supply for two industrial users, Albright & Wilson Americas (A&W) and Delta Steel. Subsequently, the U.S. EPA and Ohio EPA approved deleting Delta Steel from the current scope of the project.

A well system supplying an alternate water source to A&W became operational on December 7, 1992. FEMP completed a 60-day continuous testing run on May 24, 1993. The system continues to operate satisfactorily. Activities continue to complete the transfer of ownership of the system from DOE to A&W.

Part 2 - Pumping and Discharge System

Part 2 consists of recovery wells, piping, and associated facilities to pump contaminated groundwater from the south groundwater contamination plume to the Great Miami River after routing through the FEMP. This project was divided into five construction bid packages. These include: 2A - groundwater discharge pipeline (pressure flow) and outfall pipeline (gravity flow) from south of Willey Road to and including Manhole 183B; 2B1 - Manhole 183B to Great Miami River; 2B2 - Aeration Facility; 2C - recovery well field; and 2D - test well installation and pump test. The following is the status of the Part 2 activities:

The outfall pipeline (Part 2A and 2B1 portions of the project) was operational on May 1, 1993. Accordingly, the existing outfall pipeline was removed from service.

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Removal Actions

RA No. 3, South Groundwater Contamination Plume (continued)

The well field pumping (Part 2C) began on August 27, 1993. Pumping and discharge systems remained in operation at 2,000 gallons per minutes (gpm) (400 gpm from each of five recovery wells) through the end of November 1993. On December 2, 1993, the existing 400 gpm per extraction well pumping rate was reduced to 300 gpm per well in response to increasing concentrations of arsenic in nearby monitoring wells. This rate was selected based on previous groundwater model predictions of particle tracking and drawdown (see December report).

On December 21, 1993, the FEMP presented the results of a capture zone evaluation for the well field to U.S. EPA and Ohio EPA at a Technical Information Exchange (TIE) meeting in Chicago. The analysis indicated the well field is successfully intercepting the 20 ppb uranium concentration interval at the reduced 300 gpm per well extraction rate, thus meeting the design objectives. Ongoing evaluations suggest that arsenic concentrations in the wells south of the recovery wells are returning to pre-pumping levels.

On January 23, 1994 Cincinnati Gas and Electric experienced a blown lightning arrester on New Haven Road. This in turn tripped a breaker at the electrical substation south of the FEMP interrupting electrical service to the recovery wells. The lack of flow from the South Plume was noticed on Monday, January 24, 1994 and subsequently, restarted by the Utilities personnel. Recovery Well 5 was not restarted because of unrelated problems that were discovered on Friday, January 21, 1994. It is anticipated that Recovery Well 5 pump will need to be withdrawn and replaced with the spare (expected to be completed early February). In addition if the pump is replaced an additional spare pump will be provided for future contingency.

The Part 2D pump test was completed in June 1993.

Part 3 - Interim Advanced Waste Water Treatment

Part 3 entails installation and operation of an Interim Advanced Waste Water Treatment (IAWWT) system to reduce uranium contaminant loading to the Great Miami River to a level less than 1700 pounds per year. The IAWWT system includes two treatment units: 1) the IAWWT unit located at the Storm Water Retention Basin (SWRB) consists of two trailer-mounted assemblies, each with a 150 gpm capacity for a total capacity of 300 gpm; and 2) the IAWWT unit located at the Biodenitrification Effluent Treatment System, with a capacity of 100 gpm. Current activities are described below:

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Removal Actions

RA No. 3, South Groundwater Contamination Plume (continued)

IAWWT Storm Water Retention Basin Unit

The unit continues to use cartridge filter elements excessively during operation and the FEMP has had problems keeping them in stock. Accordingly, activities are underway to install multimedia filtration upstream of the ion exchange units. The filter units are scheduled to be installed and operational by March 31, 1994 as part of the Supplemental Project (discussed below), pursuant to the Operable Unit 2 Dispute Resolution Agreement.

IAWWT Biodenitrification Effluent Treatment System Unit

The FEMP completed installation of a new dual media filtration system. The FEMP installed two new replacement ion exchange vessels in September 1993. The unit was satisfactorily restarted in September 1993 and continues to operate.

Part 4 - Groundwater Monitoring and Institutional Controls

Part 4 involves groundwater monitoring and institutional controls. Sampling of private homeowner and existing RI/FS wells in the South Plume area continues.

The two homeowner treatment systems installed south of the FEMP continue to operate successfully. The lead ion exchange columns for both homes are beginning to show evidence of "break through." However, this indication has taken approximately one year and ample time remains before the resin in the lead column is spent. Procedures for resin column changeout are being developed and should be completed by March 31, 1994.

Part 5 - Groundwater Modeling and Geochemical Investigation

In order to define the vertical and horizontal extent of the groundwater plume contaminated with 20 ppb of uranium, analysis is being performed on the radiological results of the following phases of Part 5 as well as the groundwater monitoring of Part 4:

- Phase I - two traverse lines of Hydropunch II(™) borings within the alluvium area and concurrent sampling of existing nearby wells

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Removal Actions

RA No. 3, South Groundwater Contamination Plume (continued)

- Phase II - two traverse lines of monitoring wells with corresponding Hydropunch II(TM) sampling north and south of the proposed well field
- Phase III - seven piezometers clustered near extraction well R-4 (in accordance with the DMEPP).

A summary of these analyses is being developed. Data interpretation is being completed and this information will be included in the Operable Unit 5 RI report.

Operable Unit 2 Dispute Resolution Supplemental Project (Uranium Reduction in FEMP Discharge)

The Supplemental Project will provide for partial treatment of the South Plume discharge with the objective of further reducing uranium discharges from the FEMP to the Great Miami River. An addendum to the Part 2/3 Work Plan was prepared to incorporate this project; the amended work plan was issued to the EPAs on October 25, 1993. U.S. EPA approval has been received; awaiting Ohio EPA approval. The project consists of the following steps; the status of each is provided:

Step 1

Construct one additional IAWWT unit to treat 200 gpm of South Plume flow. This new unit, referred to as the South Plume Interim Treatment (SPIT) project, is scheduled to be operational by March 31, 1994 and will include the addition of multimedia filtration units to supplement filtration at the IAWWT System (SWRB).

The SPIT project construction contract was awarded on October 12, 1993. The construction subcontractor's design of the IX System was approved on November 2, 1993. Field construction began October 12, 1993 and is proceeding on schedule.

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Removal Actions

RA No. 3, South Groundwater Contamination Plume (continued)

Step 2

Use off-peak capacity in Phase I of the Advanced Waste Water Treatment (AWWT) system for South Plume flow when no storm water requires treatment. The AWWT package now under construction contains piping and valving to transfer South Plume flow to the existing SWRB pumping station for subsequent transfer to Phase I. This will be available when Phase I of the AWWT system becomes operational in January 1995.

Step 3

Eliminate low uranium streams (i.e., less than 20 ppb [Sewage Treatment Plant and clean-side General Sump]) from Phase II of the AWWT and use this capacity to treat a portion of the South Plume, estimated to be approximately 200 gpm.

Changes have been made to the AWWT project scope to eliminate treatment of the Sewage Treatment Plant and clean-side General Sump flows. Plans are underway to expedite installation of the 20-inch line that will eventually serve a future-planned AWWT system, Phase III. This will allow South Plume groundwater to be transferred to the AWWT Phase II system to meet this commitment. The plans will allow for the line to be available in January 1995, when Phase II of the AWWT system becomes operational.

Step 4

Extend the planned operational life of the existing IAWWT SWRB unit, convert from treating storm water to treating South Plume flow, and increase capacity from 300 gpm to approximately 400 gpm. This would be accomplished by March 30, 1995. No actions have been taken to date.

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Removal Actions

RA No. 4, Silos 1 and 2

Installation of the bentonite in Silos 1 and 2 was completed on November 28, 1991.

Due to a slight upward trend in headspace radon concentration in Silo 2, the closed-circuit video cameras were re-installed. The video cameras were used to inspect the bentonite cap for apparent signs of drying, cracking, or sloughing off the residue mounds. The results of this inspection were compared against baseline videos of the bentonite surface taken immediately following its installation. The results of this investigation will be incorporated into the Removal Action Final report, this investigation has pushed back the anticipated completion date of the Final Report until February 1994.

As defined in the Removal Action Work Plan and the FFA-CARE, data associated with monitoring the effectiveness of the bentonite installation are included in Enclosure C.

RA No. 5, K-65 Decant Sump Tank

Current activities include monitoring the liquid level of the K-65 Decant Sump Tank and performing maintenance as required. DOE will advise the EPA when pumping operations will take place.

RA No. 7, Plant 1 Pad Continuing Release

This removal action consists of three stages. Stage I, which implements the run-on/off control measures, is complete. Stage II, addressing the installation of 80,000 square feet of a newly covered and controlled concrete storage pad, is complete. Stage III involves activities to upgrade the remaining 375,000 square feet of the existing Plant 1 storage pad. Stage III upgrading activities include installation of a polymeric vapor barrier over the existing concrete and the installation of concrete above the barrier with a polyurethane sealant. In addition, 22,500 square feet of the Stage III work area will be enclosed beneath a tension support structure.

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Removal Actions

RA No. 7, Plant 1 Pad Continuing Release (continued)

Phases C and D of Stage III were not completed as scheduled (December 17, 1993). However, this should not impact the overall milestone date. Engineering, Construction, and Waste Management have been discussing how to complete portions of Phases C and D to allow Waste Management to partially clear an area of Phase E to allow the subcontractor to continue his work on April 1, 1994. A proposal has been obtained from the subcontractor to provide heat and proper ventilation inside the new tension support structure to allow completion of the coating inside the building and allow Waste Management to relocate drums from Phase E. A decision will be made on this proposal in early February and a revised schedule will be generated.

KEY MILESTONES	STATUS	DUE DATE
Complete Installation of Stage III and Tension Support Structure	Open, ahead of schedule	February 21, 1995

RA No. 9, Removal of Waste Inventories

During January 1994, 3,554 drum equivalents (DEs) of low-level waste (LLW) were dispositioned. The FY1994 goal is to dispose of 78,000 drum equivalents of low-level waste. The total DEs of LLW shipped to the Nevada Test Site (NTS) through January is 19,111 DEs which is 9,908 DEs behind schedule.

Year-to-Date volume shipped has fallen behind schedule for two reasons:

- Delays in securing DOE-NV approval for the Army Munitions Chemical Command (AMCCOM) and Thorium waste streams. These waste streams were planned to dispose of 1,994 DEs of waste.

- Delays in shipping drummed residues to SEG for compaction and the DOE-NV hold on shipments of contaminated trash have resulted in 6,116 DEs and 2,005 DEs of waste that has not been disposed as planned.

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Removal Actions

RA No. 9, Removal of Waste Inventories (continued)

Waste shipping activities for February 1994 will include continued closure of the open audit findings for contaminated trash. DOE-NV will conduct a close-out surveillance for the contaminated trash waste stream on February 17, 1994. After this surveillance, DOE-NV approval of the revised FEMP Application to Ship Waste to the Nevada Test Site, Rev.5.1, and approval of the final confirmatory sampling results for FEMP residues is expected by the end of February 1994. The application approval from DOE-NV will release the AMCCOM metal for shipment to the Nevada Test Site.

February activities also include the notification to the subcontractor of the resumption of residue shipments to SEG. Shipments are planned to begin March 1994 and continue through May 1994.

KEY MILESTONES	STATUS	DUE DATE
Submit Annual Work Procedures for 1994	Open, on schedule	June 30, 1994

RA No. 12, Safe Shutdown

The Safe Shutdown Removal Action documents the activities that will remove uranium and other material from equipment and pipelines in former processing equipment and properly disposition the removed materials and equipment off-site.

KEY MILESTONES	STATUS	DUE DATE
Submit Annual Work Procedures for 1994	Open, ahead of schedule	June 30, 1994

The Operational Readiness Review, which will allow Safe Shutdown to proceed with removal of hold-up materials from equipment and lines, was submitted to DOE-FN on August 3, 1993. DOE-FN determined that a Readiness Assessment, rather than an Operational Readiness Evaluation, would be done to assess the adequacy of the Safe Shutdown Program Planning and Implementation so that field work can proceed.

RA No. 12, Safe Shutdown (continued)

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The DOE Operational Readiness Assessment board transmitted four pre-start and two post-start findings and several observations to FERMCO on November 17, 1993. FERMCO responded to the findings on December 2, 1993, and received formal approval from DOE-FN on January 11, 1994, to proceed. However, the DOE facility representative is in the process of reviewing the first three Implementation Plans for the removal of hold-up materials from equipment in Plant 4. Once that review is complete, removal of materials can begin.

Equipment and Material Assessments (formerly Preliminary Assessments) are continuing. Field evaluations of Plants 1, 4, 7, 8, and 9 have been completed. The field evaluation of Plant 5 is in process. Red-line, as-built floor plan drawings are being prepared for Plant 5 to reflect present equipment location. Safe Shutdown is giving this effort high priority to complete Plants 5, 6 and the Pilot Plant by April 1, 1994.

The following is the status of expense items: 2,964 expense items are currently in the data base; 1,497 have been field verified; 578 are on a "shopping list" to ascertain on-site use; 1,042 have been transferred to Maintenance; and 127 have been placed on AC-563 (Property Disposal Request) Forms to be excessed. These numbers are expected to fluctuate from month-to-month as field verification is conducted.

The following is the status of capital equipment: of an estimated 1,712 total number of items, 1,122 have been put on AC-563 Forms to be excessed, and 590 have been identified as "In Use/Future Use" items. The number of items on AC-563 Forms and the "In Use/Future Use" listing may vary due to change of status of equipment items.

Seven hundred and two (702) maintenance work orders to isolate and disconnect all utilities/energy sources from equipment not in use have been prepared. Of these, 396 have been completed. Field verification of the completed orders is ongoing. Completion of these work orders is a preliminary step for removal of hold-up material from the equipment in preparation for equipment removal and decontamination and decommissioning. These numbers may vary from month-to-month due to change in status of the equipment.

Phase II of the 4A Metal Removal Project covers the shipment of approximately 1,028 metric tons of uranium of Material Description Code 228 to the NTS. Actual removal of the material from the site is contingent upon approval of the waste stream by NTS. Approval was expected in mid-January but is now projected for February 1994; shipments will proceed at five per week once approval is received.

RA No. 12, Safe Shutdown (continued)

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What was to have been the final draft of the Environmental Assessment covering the packaging and transporting of the sold normal and enriched uranium materials was received on December 16, 1993, with comments for resolution. However, due to recent changes in projected packaging and additional information needed to complete the risk assessment, the document has not been completed. FERMCO will be continuing to work with DOE-FN, DOE-HQ (Defense Programs and Environmental Management), and Hanford to bring this document to final form.

The first truckload of depleted uranium derbies was shipped on January 25, 1994, to Manufacturing Sciences Corporation (MSC) in Oak Ridge, Tennessee. A second truckload of 100 derbies has been packaged and loaded for shipment the week of February 7, 1994. Following is the status of the material to be shipped to MSC, who purchased all of the Grade 1 depleted uranium derbies:

	No. of Derbies	Net Uranium Pounds
To Be Shipped	2,613	973,651
Shipped	100	37,045
Balance	2,513	936,606

A meeting was held on Friday, January 28, 1994, with representatives from DOE-FN, DOE-HQ, and Safe Shutdown personnel to review the status of Defense Programs' materials and funding. The status of the sale was also reviewed at this meeting. The contract with COGEMA has not been finalized as yet. The Office of General Counsel at DOE-HQ is working with DOE-RL to get this completed.

During February 1994, the FEMP will continue following the progress on contracts for the sale of other portions of the uranium inventory, issuing work orders for utility isolation work, pursuing DOE-FN approval of the three implementation plans for removing materials from process equipment, and continuing to verify equipment and material evaluations for Plant 5.

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Removal Actions

RA No. 13, Plant 1 Ore Silos

The Plant 1 Ore Silos Removal Action will include the dismantling of the 14 Plant 1 Ore silos and their support structure. This dismantling will eliminate the potential threat of additional material releases and the safety hazard due to structural deterioration of the silos and their support structure. The activities in this removal action will include characterization, removal, containerization, and disposal of the materials making up the above-ground portion of the facility.

During January, 1994, the size reduction operation continued in a shut-down mode pending the release of the final report investigation on "sling breaking incident" in the Size Reduction Building. On January 24, 1994, the investigation report was issued with Recommended Corrective Actions before the operation could be restarted. RSO is presently preparing a corrective action plan as was requested in the report. Representatives from Safway Scaffolding Company were on site January 26,1994 to inspect the scaffolding at the Plant 1 Ore Silos. A field inspection report was held January 27, 1994 with recommendations for correcting discrepancies. On January 26, 1994, Surety, the bonding company, had six bidders on-site to inspect the remaining ore silos. Surety has been requested to submit a proposal by February 4, 1994.

February, 1994 activities will involve correcting the remaining unsafe/hazardous conditions at the Plant 1 Ore Silos that was observed in the field inspection on December 13, 1993.

KEY MILESTONES	STATUS	DUE DATE
Complete Removal Action	On hold. Estimated completion date November, 1994	December 19, 1994

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Removal Actions

RA No. 14, Contaminated Soils Adjacent to Sewage Treatment Plant Incinerator

This removal action will include the isolation or removal and disposition of contaminated soils in the vicinity of the Sewage Treatment Plant (STP). This action will eliminate the potential threat of additional material releases to the environmental media through migration. The activities in this removal action will include characterization, removal, and storage/disposal of the materials.

The revised Work Plan Addendum was submitted to the EPA's on July 12, 1993. A conditional approval was received from Ohio EPA on August 19, 1993. U.S. EPA approval was received August 24, 1993.

January activities included removal of 70% of the soil in Zone 4 (the former wooded area located northeast of the STP) and completion of the off-property perimeter soil sampling. The sample results for the Thorium hot-spots were received and indicated that there was still Thorium present above the action level at the boundaries of the sampling. Additional sampling will be required to identify the area of contamination.

Scheduled February activities include completion of the soil removal in Zone 4. The soil is being stockpiled on site per criteria contained in RA 17. Verification soil sampling in and around Zone 4 is scheduled to start as soon as the soil is removed. Additional sampling around the Thorium hot-spots should be complete this month.

KEY MILESTONES	STATUS	DUE DATE
Phase III - Completion of off-property and on-property excavations	Open	February 25, 1994
Phase V - Submittal of Final Report	Open, on schedule	September 26, 1994

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Removal Actions

RA No. 15, Scrap Metal Piles

The Scrap Metal Piles Removal Action will detail the stabilization and disposition of LLW scrap metal currently stockpiled on-site. This removal action will minimize material releases to the environment. Approximately 1,400 tons of scrap copper along with approximately 2,200 tons of recoverable scrap metals are the focus of this removal action.

A total of 105 tons of non-ferrous metals has been shipped to Quadrex. Shipping of non-ferrous metal is complete. Shipping of ferrous metal to SEG is complete, a total of 2,278 tons. Demobilization and decontamination of the Building 69 Pad are complete. All of the ferrous metal has been melted. A portion of the non-ferrous metal has been free released. The remaining non-ferrous metal will be processed by February 15, 1994.

Award of the contract for the scrap copper has been further delayed pending resolution of environmental legal issues. The subcontractor's Removal Action Project Plan is expected 30 days after receiving the Notice to Proceed (NTP).

KEY MILESTONES	STATUS	DUE DATE
Complete Phase I	Open, ahead of schedule	March 30, 1994
Phase I - Submit Final Report	Open, ahead of schedule	September 30, 1994
Phase IIB: Submittal of Subcontractor's Removal Action Plan	Est. completion date Sept. 1994	September 30, 1993
Phase IIB: Submittal of Final Report	Est. completion date April, 1995	March 30, 1995

RA No. 17, Improved Storage of Soil and Debris

This removal action (RA) will establish a site-wide management concept and implementation strategy for the improved storage of existing and future generated soils and debris at the FEMP. RA No. 17 also includes the design and construction of three (3) new containment structures and the containment of one large existing soil and rubble pile to provide for the appropriate improved storage of contaminated soil and debris on site. This will eliminate the potential threat of additional material releases to the environment due to wind, rain, or

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Removal Actions

RA No. 17, Improved Storage of Soil and Debris (continued)

vehicular traffic. Other activities in this removal action include the revision of site procedures to enhance the characterization, interim storage management of the contaminated soil and debris materials, until final remediation under Operable Unit 3.

The revised Request for Exemption from installing automatic sprinklers in tension support structures (TSS) was submitted to DOE-HQ on June 7, 1993. The Request for Exemption was conditionally approved by DOE EM-331 on July 29, 1993 and final approval by DOE-HQ on December 1, 1993. All design issues for the first design package have been agreed upon by DOE-FN and FERMCO as of June 11, 1993. DOE-FN granted approval on July 27, 1993 to complete the design for the Central Storage Facility (CSF), which is part of the RA No. 17 Phase I Design Package, pending NEPA review and approval of the Proposed Plan/Environmental Assessment (PP/EA) for Operable Unit 3 (OU 3). The PP/EA for OU 3 was approved by the EPAs on December 6, 1993. The direction to complete the Phase I design package and begin Part II design package [Decontamination Facility Pad (DFP) only] was given on August 20, 1993. The completed characterization report (based on recent sampling data results), submitted on November 24, 1993 provided the proposed management selection for the Soil and Rubble Pile north of Third Street. The U.S. and Ohio EPA approved the proposed plan to regrade and seed the soil and rubble pile north of Third Street on January 14 and January 11, 1994 respectively.

January activities included completion and FERMCO approval of the final Certified for Construction (CFC) design package that merged the designs for the DFP facility (part of Phase II design) and the design package for the CSF, Scrap Metal Pile (SMP), and associated facilities (Phase I) on January 20, 1994 and transferred the CFC package to the Construction Division for bid package preparation. Received written approval from the U.S. EPA on January 14, 1994 and Ohio EPA January 11, 1994 for the proposed plan to regrade and seed the existing soil and rubble pile north of Third Street. FERMCO Office of President signature approval and official implementation of Revision No. 1 of the Site Standard Operating Procedure (SSOP) SSOP-0044 was granted on January 31, 1994.

February activities will include preparation of the bid package for "Merged" CFC design package for the DFP and all Phase I structures (CSF, SMP). Sampling to be conducted in the SMP area in order to characterize the soil in this area prior to construction activities for the SMP structure will be conducted in February. Direction will be provided to the Architectural Engineer (A/E) in February to commence with Title II design for the regrading and placement of a vegetative cover over the existing soil and rubble pile north of Third Street.

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Removal Actions

RA No. 19, Plant 7 Dismantling

The Plant 7 Dismantling Removal Action will include dismantling and disposition of the Plant 7 structure. This dismantling will eliminate the threat of additional contaminant releases and the safety hazard due to histoplasmosis. The activities in this removal action will include characterization, gross decontamination, removal, dismantling, packaging, and disposal and potential recycling of the materials making up the above-ground portion of the facility.

The draft final Removal Action Work Plan (RAWP) was submitted to the EPAs on June 30, 1993. Ohio EPA granted conditional approval on July 12, 1993 with one comment, and U.S. EPA approval was dated July 30, 1993. The Ohio EPA's comment has been addressed and submitted via letter attachment, dated August 24,1993. The RAWP will not be revised and resubmitted.

Phase I activities began in May 1993 and were completed in August 1993 under the Safe Shutdown Program. Phase II activities began on July 21, 1993 and continued through October. Asbestos abatement activities within Plant 7 were completed in early October. Gross Decontamination activities commenced in early October and were essentially finished November 5, 1993.

The bid package for the dismantling scope of work went out to pre-qualified bidders on July 30, 1993. There was a pre-bid meeting at the FEMP on August 9, with a walk-through of Plant 7. Bids were received and opened on August 25, 1993; there were nine valid bidders on the contract. DOE approved the apparent low bid by Project Development Group (PDG), Inc. of Monroeville, PA for $1.8M to Dismantle Plant 7 and the Davis-Bacon determination for this work and related small projects on November 12, 1993.

The Plant 7 Dismantling Subcontract was awarded on November 16, 1993, ahead of the 90-day bid expiration date of November 25 and the award fee milestone date of December 1, 1993. The Notice to Proceed was issued to the Subcontractor on December 3, 1993; kick-off and alignment meetings were held with the Subcontractor and FERMCO Construction, Engineering, Safety, Quality, Procurement, Labor Relations, and PARSONS Title III Support December 7 & 8, 1993. The Subcontractor's office trailers were moved on-site January 27, 1994; personnel are being scheduled site training and physical exams. The Subcontractor is also in the process of writing and submitting the required Subcontractor Submittal documents. When they are reviewed, commented upon and approved, the Subcontractor plans to mobilize and begin actual dismantling work inside Plant 7 scheduled for February 7, 1994.

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Removal Actions

RA No. 20, Stabilization of UNH Inventories

The Stabilization of UNH Inventories Removal Action will remove and prepare for safe storage approximately 230,000 gallons of acidic UNH that is currently stored in 21 tanks in and around Plant 2/3. Existing processing equipment will be used to neutralize the solutions, filter the precipitate, and package the resulting filter cake in double containment for safe storage. This activity was previously part of RA No. 12, Safe Shutdown, but is being accelerated as a separate expedited response.

Processing remains on-hold pending implementation of the recommendations resulting from the Class B investigation of an incident that occurred on April 27, 1993.

RA No. 24, Pilot Plant Sump

This sump is located on the southwest side of the Pilot Plant. The sump consists of a stainless steel cylinder approximately 2 feet in diameter and 10 feet deep. This sump was built to remove liquids from the floor drains of the Pilot Plant and was used only during the renovation of the Pilot Plant in 1969. The sump is filled with a thick liquid and sludge. Analytical results of the sump contents show high concentrations of metals: lead, copper, chromium, nickel, as well as thorium and volatile organic compounds.

The field portion of the removal action was completed successfully, safely and without incident during the week of October 11, 1993. The final report was scheduled for submission to DOE-FN by December 15, 1993 and to the EPAs by December 22, 1993. EPA approved the final report on January 14, 1994.

RA No. 25, Nitric Acid Tank Car and Area

The Nitric Acid Rail Car was formerly located on the northern perimeter of the production area and east of Building 63. The FEMP RCRA Part A and Part B application identify this tank car and area surrounding it as a Hazardous Waste Management Unit (HWMU).

This high-grade, stainless steel tank car has a capacity of approximately 100,000 gallons and measures approximately 10 feet wide by 40 feet long by 15 feet high. This unit operated from 1952 until about 1989. The tank car stored nitric acid used at the FEMP. Based on recent analysis, the tank car now contains 50-100 gallons of nitric acid. This removal action includes removing residual contents from the tank car followed by decontamination and disposal of the tank car.

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Removal Actions

RA No. 25, Nitric Acid Tank Car and Area (continued)

All rinsates were transferred to Tank F1-24 of the Nitric Acid Recovery System. The results of the verification samples collected from the base of the excavation of the entire HWMU indicated chromium to be below the background. The field portion of the removal action was completed successfully, safely, and without incident and all of the objectives were met. The Final Report was submitted to DOE-FN on October 18, 1993 and was transmitted to the EPAs on November 2, 1993. EPA approved the final report December 9, 1993.

RA No. 26, Asbestos Removals (Asbestos Program)

This removal action documents asbestos abatement activity at the FEMP to mitigate the potential for contaminant release and migration. Abatements within the Asbestos Program to date include small-scale in-situ repairs, encasement, encapsulation, and removals, and the initiation of large-scale asbestos abatement within Plant 7.

The June 1993 Work Procedures submittal included Large-Scale Asbestos Work Practices, which applies to all asbestos abatement on-site (both small-and large-scale). This submittal also provided generalizations of all abatement activities to-date as well as planned abatement activities for the next year, including several large-scale abatement projects. The U.S. EPA stated on July 28, 1993 that it had no comments on the draft annual work procedures update, therefore no additional submittal is required.

The FEMP is using the Large-Scale Asbestos Work Practices to perform the asbestos abatement activities associated with RA No. 19, Plant 7 Dismantling. Plant 7 interior Thermal System Insulation and miscellaneous asbestos-containing materials removal was completed on all seven floors by the end of September 1993. The No. 4 Power Feeder Removal Pilot Project was tested on Plant 7, with successful removal of three 200 foot 500 cm cables. After temporary power is supplied to Plant 7 via pole line from Plant 5, the other identical underground power feeder can be removed, hopefully during the 2-day site wide power outage scheduled to remove asbestos splice and termination insulation from the main underground feeders in the manholes.

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Removal Actions

RA No. 26, Asbestos Removals (Asbestos Program) (continued)

Due to the deteriorated condition of the transite siding, roofing on Plant 2/3 Digester, Extraction Areas, and Plant 2D Metal Dissolver Building, interest and funding are being generated to have PARSONS resume this portion of the design. Resumption in the design would allow replacement/repair and containment actions to be taken to prevent further deterioration and hazards to personnel in those areas.

RA No. 28, Contamination at the Fire Training Facility

This removal action will address removal, decontamination and disposal, treatment or storage of all structures, tanks, equipment, the underground sump and oil/water separator, in addition to addressing "hot spots" soil staining, and any other surface soils from which a threat of migration of contamination exists.

U.S. EPA conditional approval of the Removal Action Work Plan/Closure Plan Information and Data Package (RAWP/CPID) was received August 6, 1993 and Ohio EPA disapproval was dated August 4, 1993. The revised RAWP/CPID and comment-responses were submitted to the DOE-FN on September 30, 1993 and subsequently transmitted to the EPAs on October 5, 1993. Comments from Ohio EPA on the final RAWP/CPID were received on November 16, 1993. Revised RAWP/CPID to incorporate EPA comments and submitted to DOE January 12, 1994. Incorporating DOE comments for re-submittal February 3, 1994.

RA No. 29, Erosion Control at Inactive Flyash Pile

This "time critical" removal action was performed in two phases. Phase I was an interim action completed on May 4, 1993, which involved the placement of a 220-feet long berm along the bank of Paddy's Run Creek immediately adjacent to the Inactive Flyash Pile. This initial action was implemented to mitigate the immediate threat of erosion induced slope failure and discharge of flyash to Paddy's Run Creek. Phase II involved design activities to determine the final remedy and implementation of the same. Construction of the final remedy, which is an enhancement of the initial rock berm, began on August 23, 1993 and was completed on September 9, 1993. The final report on this action is being prepared for submittal to the EPA in March, 1994.

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Remedial Investigations/Feasibility Studies

1.0 Operable Unit 1

Operable Unit 1, as defined in the Amended Consent Agreement, includes Waste Pits 1 - 6, Clearwell, Burn Pit, berms, liners, and soil within the operable unit boundary.

1.1 Treatability Studies

Scope:

The Operable Unit 1 treatability studies will evaluate several treatment process options identified in the Operable Unit 1 Initial Screening of Alternatives document, including cement stabilization and vitrification. The FEMP will evaluate the technical feasibility of these technologies through a series of experiments on both composite waste samples and individual strata samples. Where it is appropriate, the FEMP will investigate performance criteria, including formulation ranges, compressive strength, leachability, bulking factor, and permeability. Cement stabilization binding agents, including portland cement, flyash, Blast Furnace Slag, and sodium silicate, are being evaluated. Clay (attapulgite and clinoptilolite) will be added to reduce the leachability of metals in the waste. Glass formers and modifiers considered for vitrification are flyash, soil, and sodium hydroxide.

The stabilization testing was planned to be conducted in two phases. The preliminary phase, now complete, consisted of reagent range-finding experiments on a pit-by-pit basis using composite samples from individual waste pits. The advanced phase consisted of testing on strata samples where available. Each phase contained two stages permitting additional reagent testing as necessary. The advanced phase was discontinued after evaluation of preliminary phase data indicated further test work was unnecessary.

The FEMP will investigate a variety of drying methods including flash drying, rotary drying, and microwave drying. The FEMP will also test agglomeration of dried particles to reduce dusting, depending on the drying method and final particle size of the dried waste material. Polymer encapsulation will be studied using several types of low density polyethylene.

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Remedial Investigations/Feasibility Studies

1.1 Treatability Studies (continued)

Status:

Remedy Screening/Remedy Selection Treatability Studies in support of the OU 1 Remedial Investigation/Feasibility Study are complete. OU 1 Treatability Studies to support Remedy Design will be developed as needed based on the Proposed Plan and Record of Decision.

Issues/Corrective Actions:

None to report.

1.2 Remedial Investigation

Scope:

The FEMP will prepare a Remedial Investigation (RI) Report in accordance with the U.S. EPA Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA (EPA Directive 93553-01) and the approved Risk Assessment Work Plan Addendum.

Status:

Submittal of the OU 1 Draft Final Remedial Investigation/Baseline Risk Assessment to the U.S. EPA and Ohio EPA is scheduled to occur on Friday, February 4, 1994, in agreement with provisions of the Amended Consent Agreement.

Issues\Corrective Actions:

None to report.

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Remedial Investigations/Feasibility Studies

1.2 Remedial Investigation (continued)

OPERABLE UNIT 1 REMEDIAL INVESTIGATION REPORT — PRIMARY

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA FINAL
Details the nature and extent of contaminants within the Operable Unit 1 study area. Estimates the volume of contaminated media and materials. Provides a baseline risk assessment and establishes remedial action objectives.	10/4/93 A	12/20/93 A	02/04/94 C

C = Consent Agreement Date
A = Actual
* = Request for extension

1.3 Feasibility Study

Scope:

The Feasibility Study evaluates remedial alternatives in detail with respect to the nine evaluation criteria developed by the U.S. EPA. The study analyzes remedial alternatives individually against each criterion and then compares them against one another to determine their respective strengths and weaknesses and to identify the key tradeoffs that must be balanced for the site.

Status:

The Draft OU 1 Feasibility Study/Proposed Plan (FS/PP) was submitted to DOE-FN/HQ on November 9, 1993. Comments were received from DOE by December 15, 1993. Revision to address DOE comments and revise OU 1 FS/PP is underway.

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA FINAL
Describes and analyzes potential remedial alternatives. A comparative analysis is performed for all alternatives.	03/07/94 C	05/06/94 C	06/04/94 C

C = Consent Agreement Date A = Actual

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Remedial Investigations/Feasibility Studies

1.4 Planned Activities for February 1994

- Complete revision and comment incorporation into the Final OU 1 Remedial Investigation/Baseline Risk Assessment Report.
- Continue revision and comment incorporation on the Draft OU 1 Feasibility Study/Proposed Plan.
- Submit the OU 1 Draft Final Remedial Investigation/Baseline Risk Assessment to U. S. EPA and Ohio EPA on February 4, 1994.

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Remedial Investigations/Feasibility Studies

2.0 Operable Unit 2

Operable Unit 2, as defined in the Amended Consent Agreement, includes the flyash piles, other South Field disposal areas, lime sludge ponds, Solid Waste Landfill, berms, liners, and soil within the operable unit boundary.

2.1 Field Investigation

2.1.1 RI/FS Work Plan Addendum for Operable Unit 2

Scope:

DOE-FN submitted the Remedial Investigation Report for Operable Unit 2 to the U.S. EPA and Ohio EPA in October 1992. Based on December 17, 1992, review comments from the U.S. EPA and Ohio EPA on the RI Report and subsequent disapproval of the document, Operable Unit 2 will require a second phase of Remedial Investigation sampling and analysis in order to meet the objectives of the March 1988 RI/FS Work Plan.

Status:

The tasks to produce an accelerated Revised Draft OU2 RI Report have been successfully completed. The Revised Draft OU2 RI Report was submitted to DOE, according to the revised schedule, on November 12, 1993. This date was established to allow the designated review periods by DOE and enable the CRU2 Revised Draft RI Report to be submitted to the EPA on February 18, 1994. The February 18, 1994 submittal date to EPA is required by the Agreement Resolving Dispute Concerning Denial of Request for Extension of Time to Submit Operable Unit 2 Documents (1993), an amendment of the U.S. EPA Amended Consent Agreement (1991).

DOE reviewed the CRU2 Revised Draft RI Report and provided comments on December 14, 1993. DOE comments were incorporated in the document and OU 2 submitted the report on schedule meeting the January 14, 1994 deadline. Final comments from DOE will be completed on February 1, 1994. The OU 2 Revised Draft RI Report will be completed by February 14, 1994 for submittal to EPA February 18, 1994.

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Remedial Investigations/Feasibility Studies

2.1 Field Investigation (continued)

Issues/Corrective Actions:

OPERABLE UNIT 2 REMEDIAL INVESTIGATION REPORT **PRIMARY**

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA FINAL
Submit RI Report/Baseline Risk Assessment	02/18/94 C	04/15/94 C	05/13/94 C

C = Consent Agreement Date

2.2 Feasibility Study

Status:

FERMCO has submitted the Draft OU 2 Feasibility Study Report to DOE, meeting the scheduled deadline of January 28, 1994.

DOE will provide OU 2 with comments to the Feasibility Study by February 25, 1994.

Issues/Corrective Actions:

Evaluate the revised Remedial Investigation results, the RI schedule is being accelerated.

OPERABLE UNIT 2 FEASIBILITY STUDY REPORT **PRIMARY**

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA FINAL
Describes and analyzes potential remedial alternatives. A comparative analysis will be performed for all alternatives.	04/29/94 C	06/27/94 C	07/25/94 C

C = Consent Agreement Date

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Remedial Investigations/Feasibility Studies

2.3 Planned Activities for February 1994

- DOE review and comment of the FS/PP.
- Incorporate DOE comments on the FS.
- Continue analysis of geotechnical samples from the Solid Waste Landfill and the proposed Operable Unit 2 disposal cell.
- Anticipate placement of the Radiological Lab Subcontract and obtaining test samples for the Lime Sludge/Flyash Treatability Study.
- Submittal of the Closeout Report for the Paddy's Run Erosion Project.
- Continue engineering support work for the Solid Waste Landfill.
- Complete and submit the Revised Draft RI Report to the EPA on February 18, 1994.

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Remedial Investigations/Feasibility Studies

3.0 Operable Unit 3

Operable Unit 3, as defined in the Amended Consent Agreement, includes the Production Area and production-associated facilities and equipment (including all above-and below-grade improvements) including all structures, equipment, utilities, drums, tanks, solid waste, waste, product, thorium, effluent lines, K-65 transfer lines, waste water treatment facilities, fire training facilities, scrap metal piles, feed stocks, and coal pile.

3.1 RI/FS Work Plan

Scope:

The RI/FS Work Plan details the approaches and assumptions to be applied to gathering information and the presenting results. Specifically, the Operable Unit 3 RI/FS Work Plan identifies the approach to be employed for baseline risk assessment and the specific sampling and sampling strategy to be performed during the field investigation program.

Status:

The Ohio EPA provided comments and granted conditional approval of the RI/FS Work Plan Addendum on February 16, 1993. In an April 14, 1993, letter, the U.S. EPA conditionally approved the revised Addendum, based on the comment-response package provided to the EPAs on March 19, 1993. After incorporation of the changes proposed in the comment-response package, and addressing some minor U.S. EPA concerns, the U.S. EPA provided final approval of the RI/FS Work Plan Addendum by letter of August 4, 1993.

Fourteen Field Work Packages were completed, approved, and distributed in January, 1994 with the sampling identified therein, encompassing a large extent of the samples anticipated to be taken in the next couple months of Operable Unit 3 RI/FS sampling.

Issues/Corrective Actions:

None to report.

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3.2 Field Investigation

Scope:

The Operable Unit 3 Field Investigation Program gathers information necessary to perform a baseline risk assessment. The program also identifies the nature of contaminants in the operable unit, refines estimates of volume of contaminated materials, and supports initial screening of applicable alternatives.

Status:

Field screening for chemical and metals contamination continued throughout January 1994 using two field portable X-Ray fluorescence analyzers, a field portable gas chromatograph and photo-ionization detectors. Chemical screening was performed to support selection of intrusive media locations on the Pilot Plant Dissociator Shelter, Plant 8 West Pad, Plant 6 Warehouse, Plant 8 Warehouse, and Pilot Plant Maintenance Building.

Intrusive media sampling was initiated in the Scrap Recovery Plant, Metals Fabrication Plant, Harshaw Fume Digestion Building, and the Hot Raffinate Building. A total of 98 intrusive samples were collected in January 1994.

Placement of the first task order against the Radioanalytical Laboratory Services Task Order Subcontract has been awarded to Datachem Labs. The archived radiological liquid samples are scheduled to be shipped the week of January 31, 1994. The second and third task orders are currently in Procurement for placement. It is anticipated that the second and third task orders will be placed in February 1994. This schedule is dependent upon the lab(s) meeting SCQ requirements. Specifically, this schedule may slip if it is necessary to perform a preaward audit of the lab(s) prior to shipment of the samples.

Issues/Corrective Actions:

None to report.

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Remedial Investigations/Feasibility Studies

3.3 Treatability Studies

Scope:

The treatability studies gather information necessary to support remedy selection, engineering, and implementation. Specific studies are structured to gather the information necessary for specific technologies identified through screening as part of leading alternatives.

Status:

The FEMP will conduct remedy screening treatability studies in parallel with the field investigation and alternatives development. Operable Unit 3 has developed a Treatability Study Work Plan (TSWP) to include initially-identified studies to be performed. Current actions involve the description of planned testing for the initial studies. The plan was transmitted to U.S. EPA December 22, 1993, ahead of the scheduled January 15, 1994 due date to the EPA. Comments were received from OEPA on the TSWP in January 1994. No comments from USEPA have been received as of January 31, 1994. Additional tests will be planned and submitted as Addenda to the Treatability Study Work Plan, once identified and detailed.

Issues/Corrective Actions:

None to report.

3.4 Remedial Investigation Report

Scope:

The Remedial Investigation Report provides a summary of the field investigations and supports the Feasibility Study by defining the nature and extent of the contaminants in Operable Unit 3, estimating the volume of contaminated media and materials, and providing a baseline risk assessment which establishes remedial action objectives.

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Remedial Investigations/Feasibility Studies

3.4 Remedial Investigation Report (continued)

Status:

Formal development of the RI has begun in the form of report planning, RI Report layout, Baseline Risk Assessment Report layout, non-data dependent background information collection/integration, and Baseline Risk Assessment scenario development. Data management procedures have been implemented to track and manipulate field characterization data. As of January 31, 1994, approximately 40% of the invalidated chemical field characterization analytical data and 0% of the radiological field characterization analytical data have been received from the laboratories. Approximately 12% of planned data to be collected has been validated.

Issues/Corrective Actions:

None to report.

3.5 Feasibility Study

Scope:

The Feasibility Study evaluates alternatives in detail with respect to the nine U.S. EPA evaluation criteria. The FEMP analyzes the alternatives individually and then compares to one another to determine respective strengths and weaknesses and to identify key tradeoffs. The Feasibility Study also includes an overall assessment of site residual risks through a Comprehensive Response Action Risk Evaluation.

Status:

Operable Unit 3 has not begun formal activities on the Feasibility Study, although alternatives research, initial screening, and document layout planning are underway. As a result of the development of a Proposed Plan for Interim Action, the Feasibility Study will not address initial decontamination or dismantling, but will focus on treatment and disposal issues, which remain the scope of the final action and final Record Of Decision.

Issues/Corrective Actions:

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Remedial Investigations/Feasibility Studies

None to report.

3.6 Interim Action - Proposed Plan/Interim Action - Record of Decision

Scope:

The Interim Action Record of Decision (IROD) will document the preferred alternative from the Interim Action PP/EA, as amended through public comment. The IROD draft will be submitted for U.S. EPA review and approval and, once approved, will form the basis for completing the decontamination and dismantlement action for Operable Unit 3 components.

Status:

The public comment period for the Interim Action PP/EA was extended an additional 30 days to allow additional time for the public to fully understand the proposal and to generate comments. The public comment period will end February 8, 1994, and subsequently, the IROD and responsiveness summary will be prepared and submitted for review.

Issues/Corrective Actions:

The overall NEPA strategy for the site became a point of question during the public meeting held January 5, 1994. A subsequently scheduled NEPA/CERCLA Round-table January 24, 1994 resolved the majority of the concerns.

3.7 RD/RA Work Plan

Scope:

The Interim RD/RA Work Plan will detail how design activities will be performed to meet the scope of the IROD for facility decontamination and dismantlement, and how this design will then be implemented through the Remedial Action.

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Remedial Investigations/Feasibility Studies

3.7 RD/RA Work Plan (continued)

Status:

Utilizing a significant work force across the site, a preliminary draft of the RD/RA Work Plan was completed and reviewed by a small peer group to ensure completeness and presentability of the document. The Work Plan was modified based on comments provided through the peer review and a draft transmitted January 31, 1994 for formal internal FERMCO review. Included in this internal review are various Divisions within FERMCO who may have stakeholder interests in the activities outlined in the Work Plan. Comments are due by February 17, 1994.

Issues/Corrective Actions:

None to report.

3.8 Planned Activities for February 1994

- Continue efforts to complete the shipment of samples under the first task order against the Radioanalytical Laboratory Services Task Order Subcontract. Continue efforts to support the placement of the second and third task orders for possible shipment of samples for radioanalytical analysis in February 1994. Begin development of a fourth task order for the analysis of samples taken during the later part of February 1994 and most of March 1994.

- Continue development of the RD/RA Work Plan for Interim Action, including the review and incorporation of comments resultant from the internal FERMCO review of the draft RD/RA Work Plan.

- Continue writing Field Work Packages.

- Prepare and issue statements of work to begin procurement of vendor services on Planned Treatability Studies and continue efforts to identify additional needed studies.

- Complete internal revisions of a draft IROD and initiate Responsiveness Summary Development.

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Remedial Investigations/Feasibility Studies

- Complete public comment period for OU 3 PP/EA on February 8, 1994.

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Remedial Investigations/Feasibility Studies

4.0 Operable Unit 4

Operable Unit 4, as defined in the Amended Consent Agreement, consists of Silos 1, 2, 3, and 4, the silo berms, the Decant Sump Tank System, and soil within the operable unit boundary.

4.1 Field Investigation (Sampling West of K-65 Silos 1 and 2)

Scope/Status:

The Field Investigations in support of the Operable Unit 4 Remedial Investigation, and Feasibility study reports have been completed. Data from the additional sampling west of K-65 Silo's 1 and 2 has been incorporated in the OU 4 FS. Operable Unit 5 will continue to monitor water levels of wells 11204, 11205, 11206, and 11207. Monitoring Well 11207 will be sampled if and when the well yields a sufficient volume of water.

Data from this sampling program will be incorporated into the Operable Unit 5 RI report.

Issues/Concerns

None

4.2 Treatability Studies

Scope:

A Treatability Study Work Plan addresses the additional information that is required to support the FS and subsequent remedy selection for Operable Unit 4. There are two separate treatability studies to support the Operable Unit 4 FS. One study considers cement stabilization of Silos 1, 2, and 3 material and chemical extraction, leachate precipitation, and leachate stabilization of Silos 1 and 2 material. The second treatability study considers the vitrification of Silos 1, 2, and 3 material.

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CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS MONTHLY PROGRESS REPORT

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4.2 Treatability Studies (continued)

Status:

Treatability studies for Operable Unit 4 have been completed. The results from the vitrification studies, the Cement Stabilization Preliminary and Advanced Phase Tests, and the Chemical Extraction test have been summarized and incorporated in Appendix C of the Operable Unit 4 Feasibility Study.

The Cement Stabilization Optional Phase Treatability testing report has been completed and is included in the Operable Unit 4 Feasibility Study as Appendix H.

4.3 Remedial Investigation Report

Scope:

The RI provides a summary of the field investigations and supports the FS by defining the nature and extent of the contaminants in the Operable Unit 4 study area, estimating the volume of contaminated media and materials, and providing a baseline risk assessment which establishes remedial action objectives.

Status:

The Operable Unit 4 Remedial Investigation Final Report was transmitted to the U.S. EPA on October 29, 1993. Ohio EPA approved the document on November 23, 1993. DOE received comments on the Baseline Risk Assessment portion of this report from the U.S. EPA Region V. These comments are being addressed. Revisions to the Operable Unit 4 Remedial Investigation Final Report will be issued during February 1994.

4.4 Feasibility Study

Scope:

The FS evaluates remedial alternatives in detail with respect to the nine evaluation criteria developed by the U.S. EPA. The remedial alternatives are analyzed individually against each criterion and then compared against one another to determine their respective strengths and weaknesses, and to identify the key tradeoffs that must be balanced for the site.

4.4 Feasibility Study (continued)

Status:

Ohio EPA comments on the Draft Final Operable Unit 4 Feasibility Study were received on January 25, 1994. U.S. EPA comments on the Draft Final Operable Unit 4 Feasibility Study Report were received on January 31, 1994. The report will be revised to incorporate the comments and be resubmitted to U.S. and OEPAs in February 1994.

Issues/Corrective Actions:

None

OPERABLE UNIT 4 FEASIBILITY STUDY **PRIMARY**

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA FINAL
Describes and analyzes potential remedial alternatives. A comparative analysis is performed for all alternatives.	09/10/93 C 09/09/93 A	11/10/93 C 11/12/93 A	12/28/93 C 12/21/93 A

C = Consent Agreement Date
A = Actual Date

4.5 Proposed Plan

Scope:

The Proposed Plan identifies the remedial alternatives being considered for the remediation of Operable Unit 4 in the Feasibility Study for Operable Unit 4. The preferred alternative and the reasons for its selection will also be presented. The DOE-FN and the U.S. EPA will solicit public comments on the alternatives presented including the preferred alternative.

Status:

Ohio EPA comments on the Draft Final Operable Unit 4 Proposed Plan were received on January 25, 1994. U.S. EPA comments on the Draft Final Operable Unit 4 Proposed Plan were received on January 31, 1994. The report will be revised to incorporate the comments and be resubmitted to U.S. and OEPAs in February 1994.

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4.5 Proposed Plan (continued)

Issues/Corrective Actions:

None

OPERABLE UNIT 4 PROPOSED PLAN **PRIMARY**

SCOPE	SUBMIT TO EPA	RECEIVE FROM EPA	SUBMIT TO EPA FINAL
Identifies potential remedial alternatives as listed in the FS and presents the preferred alternative to the U.S EPA and the public.	09/09/93 A	11/10/93 C 11/12/93 A	12/28/93 C 12/21/93 A

C = Consent Agreement Date
A = Actual Date

4.6 Record of Decision

Status:

A draft Record of Decision (ROD) for Operable Unit 4 was completed on December 14, 1993. This draft ROD is based on the draft Final Feasibility Study and Proposed Plan issued to the U.S. EPA and Ohio EPA on December 21, 1993. The draft ROD will be revised to reflect the additional comments received on the FS/PP.

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4.7 Planned Activities for February 1994

- Revise the Fact Sheet for the Proposed Plan
- Continue work on the Operable Unit 4 Administrative Record for the RI and FS Reports
- Revise the Draft Record of Decision based on the U.S. EPA and Ohio EPA comments on the Draft Final FS and Proposed Plan
- Incorporate comments from the U.S. EPA into the Final Feasibility Study Report and Proposed Plan for Operable Unit 4
- Resubmit the Final Feasibility Study Report and Proposed Plan for Operable Unit 4.
- Revise the Operable Unit 4 Remedial Investigation Report to address U.S. EPA comments.
- Submit revisions to the Operable Unit 4 Remedial Investigation Report to the U.S. EPA.

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5.0 Operable Unit 5

Operable Unit 5, as defined in the Amended Consent Agreement, includes: groundwater, surface water, soil not included in the definitions of Operable Units 1 through 4, sediment, flora and fauna.

5.1 RI Field Investigation

5.1.1 Operable Unit 5 Field Investigation Tasks

During a data analysis, Operable Unit 2 called attention to an area where surface soil was disturbed before April 1954, probably during construction of the FEMP. This area was first brought to DOE's attention in 1988 by an EPA-contracted analysis of historic air photographs of the FEMP property. At that time, DOE and the EPAs agreed that, due to its proximity to the road and from interviews with long-time employees, this was not likely to be a disposal site. However, in order to confirm that the area was not used for disposal, Operable Unit 5 wrote a project specific plan (PSP) for sampling the Southwest Field and executed a five-boring sampling program in December 1993. The field screening instruments did not detect any contamination nor was any suspicious material observed in any of the samples. Analytical data was received from the laboratory in mid-January. One boring had total uranium values up to 9 ug/g; all other samples were at the detection level of 1 ug/g or less. This activity is concluded.

The Groundwater Monitoring staff are developing plans for removing Well 2561 located at the southern end of Paddy's Run (using FERMCO Construction Services personnel and equipment); removal is tentatively scheduled for mid-February.

Issues/Corrective Actions:

None to report.

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5.1.2 Abandonment and Plugging of KC-2 Warehouse Well No. 67

Scope/Status:

During July 1993, attempts were made to remove a sediment-like material from Well 67 of the KC-2 Warehouse, but due to the lack of progress, the project was halted. A fact sheet containing the analytical results of sediment and groundwater samples and a request to discontinue abandonment activities were prepared and submitted to the U.S. and Ohio EPAs in October 1993. The fact sheet recommended that the well casing remain accessible until final closure of the KC-2 Warehouse so that groundwater samples could be collected on a semiannual basis for total uranium and HSL metals analyses. The fact sheet also stated that once the KC-2 Warehouse was decommissioned, further attempts would be made with larger equipment to remove the well casing from the ground. The Ohio EPA responded and agreed with the findings and recommendations, thus completing these activities.

Issues/Corrective Actions:

None to report.

5.2 Treatability Study

Scope:

The Treatability Study provides information to support the Feasibility Study and subsequent remedy selection for Operable Unit 5. Specifically, the study will demonstrate the feasibility of soil washing as a remedial technology for cleaning soil. The study consists of two phases: I) remedy screening Stages 1 and 2, involving laboratory and bench-scale tests; and II) remedy selection using pilot-scale equipment. The study incorporates a physical separation/chemical extraction process that has the ability to separate a soil into different particle-size fractions. The process uses reagent formulas in the washing solutions to extract contaminants from the soil. The contaminants may be separated from the wash stream into a concentrated residue for further treatment.

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5.2 Treatability Study (continued)

Status:

Initial bench-scale studies were done on soil from the following areas: incinerator area (ID-A), Plant 1 Pad Area (ID-B) and maintenance building area (OU 5-A). Results from these bench-scale studies were used to provide the initial operating conditions for start-up of the remedy selection soil washing pilot plant. Initial operating conditions included physical separation processes followed by chemical extraction with a dilute inorganic acid at an elevated temperature. The test system is designed to include spent extractant treatment.

After installing the equipment and training operations' personnel, the soil washing pilot plant began processing radiologically contaminated soil, completing the ID-A and ID-B soil in August 1993. Results from the initial sample analysis, performed in the FERMCO on-site laboratory, were summarized and the mass balance calculated. FERMCO is evaluating the data.

A soil treatability laboratory has been established at the Fernald facility to support pilot plant testing and expand bench testing to address additional constitutents of potential concern (CPCs) in support of all FERMCO's RI/FS studies. Bench testing on additional CPCs at the Fernald facility will be conducted through March 1994.

The FEMP began designing and programming a database to accommodate Operable Unit 5 remedy screening and remedy selection data. The database is being designed to also accommodate soil washing treatability test data from Oak Ridge National Laboratory. This test program has been conducted in parallel to the Operable Unit 5 study under the umbrella of the DOE Uranium in Soils Integrated Demonstration Program.

Phase II of the pilot plant testing program was initiated mid-November 1993 and will examine other chemical reagents and operational parameters in a batch mode. This Phase II testing program will be completed in late March 1994.

The Phase II testing activities are being funded primarily by the DOE Office of Technology and Development through the Uranium in Soils Integrated Demonstration Program and is being coordinated by FERMCO soil treatability and remedial design organizations.

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5.2 Treatability Study (continued)

Issues/Corrective Actions:

None to report.

5.3 Remedial Investigation

Scope:

The Remedial Investigation (RI) is the mechanism for collecting data to characterize site conditions, determine the nature of the site's wastes, determine the nature and extent of contamination and assess baseline risk to human health and the environment.

Status:

RI data compilation and evaluation continue. All data sources to be included in the Operable Unit 5 RI are being identified and evaluated. Chemical and radiological data collected as part of both the RI/FS and other site sampling programs are being posted on maps and evaluated. The FEMP is compiling, evaluating, and updating the geologic and hydrogeologic information contained in RI/FS site files and documents. Existing maps and cross sections are being updated where additional information has become available. New maps and cross sections of the glacial overburden continue to be generated.

Validation of the data set to support the RI is complete. Remaining verification, quality control, and formatting of the validated database are continuing. Estimated completion is in February. As of December 18, 1993, 87 percent of the data set was downloaded from the Sitewide Environmental Database (SED) to Operable Unit 5 staff for the high priority tasks of: surface soil, subsurface soil, surface water/sediment, groundwater and facilities testing. Work continues on splitting up the high priority data download into a format suitable to support Sections 4, 5, and 6 of the RI Report.

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5.3 Remedial Investigation (continued)

Preparation of Sections 1, 2, 3, 4, 5, 6 and 7

Section 1

- An earlier version of Section 1 was used as a template. Distilled, reorganized and reviewed other source documents for text to support Operable Unit 5-specific descriptions.

Sections 2 and 3

- The layout and planning of graphics for Sections 2 and 3 are complete.
- The text has been written and is in FERMCO review. Efforts are underway to reduce the volume of text and make the discussion of the 60 work plans that created data for Operable Unit 5 more readable.

Section 4

- Finished extracting data from the SED for input to modeling and risk assessment tasks and created internal databases for soil, groundwater and surface water/sediment. These media databases were printed for quality control to make sure the electronic transfer was complete and to check the quality of data.
- Invalidated/nonverified data has some obvious problems — lack of lab qualifiers, missing header information, etc. Any problems that can be corrected by computer, such as pulling lab qualifiers when no validation qualifiers exist, will be done in Pittsburgh working with the SED. Missing header information will be referred to the site for input.
- Quality of validated/verified data appears high.

5.3 Remedial Investigation (continued)

- High rejection rate of Core Laboratory's total uranium results was identified. Through discussions among Core Laboratory, EBASCO and FERMCO personnel, the problem was identified and corrected.

  Validation protocols were being applied too strictly to some data. It was determined that some data should not have been rejected. EBASCO was instructed to reissue corrected documentation for the rejected data and to prepare a database to facilitate changing both the SED and Pittsburgh's database.

Section 5

- Various source areas to be modeled are being identified and grouped in preparation for fate and transport modeling. The data to be used in modeling are being identified and will be separated into the various groups.

Section 6

- Preparation of the conceptual site model for the Operable Unit 5 risk assessment began October 27, 1993. A draft of the model was transmitted to DOE on November 5, 1993. Operable Unit 5 is working with Regulatory Programs to finalize the model. Work continues on the preparation of the exposure assessment.

  In addition, work continues on the preparation of the Sitewide Ecological Risk Assessment.

Issues/Corrective Actions:

Due to continuing problems with the downloads from the SED, Operable Unit 5 has initiated a comprehensive review of all the data to ensure that all information in the SED is usable for the RI.

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5.4 Planned Activities for February 1994

- Finalize RI report for February submittal to DOE.
- Complete validation of the laboratory data from the Summer 1993 field program and from supplemental non-RI/FS programs.
- Verify that the data in the SED is correct and properly coded so data retrievals are consistent and complete.
- The response to comments on the "Characterization of Background Water Quality for Streams and Groundwater" has been approved by the U.S. EPA and Ohio EPA. The report is being revised, but final statistical work which includes data from the summer field programs will not be completed until after the draft Operable Unit 5 RI is submitted to DOE on February 25, 1994. The "Characterization of Background Water Quality for Streams and Groundwater" report will be completed during March 1994.
- Work continues on the groundwater model improvements. A final "Groundwater Modeling Report - Summary of Model Improvement" will be released in April 1994. U.S. EPA has agreed to provide input to this process.

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6.0 On-Site Disposal Cell

The Engineered Waste Management Facility (EWMF) scope has been modified to evaluate the On-Site Disposal Cell (OSDC) alternative along with the complete evaluation of off-site alternatives. All further reference to the EWMF will be entitled OSDC.

The technical approach for the evaluation will be based on information previously developed for the EWMF. This information is being expanded to include the development of engineering assessment to evaluate the On-Site Disposal/Storage, Off-Site Disposal, and Transportation Risk Assessment for Off-Site Disposal. The information generated by these technical reports and the reports that will be generated from the information gathered for the EWMF Siting Report will serve as a basis for evaluating the disposal options and alternatives. These reports were completed in September 1993. No further work is anticipated on the On-Site Disposal, until design begins.

6.1 EWMF General Siting Report

Scope:

The EWMF Siting Report was scoped to evaluate the feasibility of locating an EWMF facility at the FEMP. The intent was to deliver all of the information necessary to meet the requirements in a singular document. In order to expedite the delivery of the technical information, the report has been subdivided into six stand-alone technical reports. The technical reports will be identified as follows with the appropriate scope:

- Geotechnical Engineering Analysis for an On-Site Disposal Cell - This report will contain the engineering analysis prepared for the EWMF structure. This will include an analysis of the barrier and cap design, drainage system, erosion analysis, slope stability analysis and an estimated cost of construction for an on-site tumulus. The report will be entitled, "Technical Report 5.1A, Engineering Evaluation Report for On-Site Disposal."

- Site Characterization Report - This report will include the investigation and evaluation of the site geology, radiation measurements, well installation diagrams, boring logs, and analytical data. This report will be entitled "Technical Report 5.1B, Site Characterization/Geological Report for On-Site Disposal."

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6.1 EWMF General Siting Report (continued)

- Material Source Survey - This report will discuss the availability and cost of materials in the local area required to construct the OSDC. This report will be entitled "Technical Report 5.1C, Material Source Survey for On-Site Disposal."

- ARARs Report - This report will identify and discuss the ARARs that will be applicable to the construction of an OSDC. This report will be entitled "Technical Report 5.4, ARARs for On-Site Disposal Cell Concept."

- Survey of Local Geology in the Alternate Siting Areas - This report will cover the investigation of two alternative sites for the OSDC adjacent or near the FEMP situated on bedrock highs. The two sites to be evaluated are the Girl Scout Camp and another located west of the FEMP. The report will be entitled, "Technical Report 5.3A, Geological Report for Off-Site Disposal."

- Ecological Characterization - This report will discuss the ecological characterization of the two off-site locations. The two sites to be evaluated are the Girl Scout Camp and another located west of the FEMP. The report will be entitled, "Technical Report 5.3B, Ecological Characterization of the Off-Property Disposal Cell Study Area."

Status:

The EWMF Site Report was completed in June 1993, and pertinent information was incorporated as needed into the Draft OU1 Feasibility Study report. No further work is anticipated.

Issues/Corrective Actions:

None to report.

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7.0 Community Relations

Status:

On January 5, 1994, over 70 people attended a public meeting on the *OU 3 Proposed Plan/Environmental Assessment for Interim Remedial Action.* Of the total attendance, 43 were community residents/stakeholders with the remainder representing various agencies. DOE/FERMCO gave a presentation on the Proposed Plan followed by a question and answer session. Since some attendees felt more time was needed before commenting on the plan, at the public's request, DOE extended the comment period an additional 30 days, from January 10 to February 8, 1994. As a result, a second Notice of Availability was issued. The public also requested a roundtable be held to explain the NEPA/CERCLA integration. During the formal comment session, three people gave comments. A stenographer transcribed the entire meeting and the transcript of the meeting was placed in the Public Environmental Information Center.

On January 12 and 13, 1994 Thomas P. Grumbly, Assistant Secretary for Environmental Management for the Department of Energy, visited the Fernald site. During his visit, Grumbly met with DOE's Fernald management team, FERMCO managers, the leadership of the unions representing Fernald workers, and the Fernald Residents for Environmental Safety and Health (FRESH). Grumbly also toured the site and viewed a variety of technologies that are being used or considered for use in the Fernald cleanup.

The Fernald Citizens Task Force held its regular monthly meeting on January 15, 1994, at the Meadowbrook Inn, in Ross, Ohio. About 12 members of the public, DOE, and FERMCO observed. The Task Force began its discussion of future land use options for the Fernald site, and the suggestions included making the site a federal office building, an industrial park, a nature preserve, a museum, a prison, a regional airport, and mixed uses. The Task Force also agreed to ask DOE to develop a plan to notify the public about waste shipments from the Fernald site. The next Task Force meeting is scheduled for February 12, 1994, at the AmeriSuites in Forest Park, Ohio.

On January 24, 1994, DOE conducted a roundtable on NEPA/CERCLA Integration. Approximately 20 community residents/stakeholders attended. A presentation on how the OU3 Interim Action fits into the NEPA/CERCLA process was given. The meeting was audio-taped and a tape will be placed in the Public Environmental Information Center.

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7.0 Community Relations (continued)

DOE-FN representatives attended the monthly FRESH meeting on January 27, 1994. Approximately 60 people attended including members of the community, other stakeholders, representatives from FATLC and Ohio EPA and a news team from CNN. Phil Hamric, DOE site manager, spoke about developing a vision for Fernald which would set the pace for future cleanup work. Three Fluor Daniel officials, who are on temporary assignment at Fernald, spoke about changes in the organizational structure of FERMCO. Other topics discussed included:

- The 30-day extension of the public comment period on the OU3 Proposed Plan/Environmental Assessment for Interim Remedial Action
- Waste shipments to Envirocare to begin in February 1994
- Upcoming public involvement activities for Operable Unit 4.

Issues/Corrective Action:

None.

7.1 Planned Activities for February 1994:

- The Fernald Citizens Task Force will hold its monthly meeting on February 12, 1994 from 9 a.m. - 1 p.m. at the AmeriSuites in Forest Park, Ohio.
- A public workshop will be held on February 15 at the ERA Building beginning at 7 p.m. The topic will be FERMCO/DOE Cost Plus Award Fee program.
- DOE will submit the Remedial Investigation Report for Operable Unit 2 to U.S. EPA on February 18, 1994.
- DOE will hold a Community Meeting to discuss cleanup progress at the Fernald site, waste shipments, budget, and the RI/FS schedule and milestones. The meeting is scheduled to begin at 6 p.m. on February 22, 1994 at the Plantation in Harrison, Ohio.
- FRESH will hold its regular monthly meeting on February 24, 1994.

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PERIOD ENDING JANUARY 31, 1994

ENCLOSURE A

WASTE WATER FLOWS AND RADIONUCLIDE

CONCENTRATIONS UNDER CA SECTION XXIII.B

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Period Ending January 31, 1994

Introduction

The accompanying Effluent Radiation Reports provide, in accordance with the requirements of Section XXIII.B of the Consent Agreement As Amended under CERCLA Sections 120 and 106 (a), data on the daily waste water flows, radionuclide concentrations, and loadings released to the Great Miami River and an estimate of runoff and radionuclide concentrations to Paddy's Run during January 1994.

Summary - January 1994

The total quantity of uranium discharged from the FEMP to the Great Miami River via Manhole 175 (Outfall 1lo00004001) was 37.25 kilograms. The average uranium concentration for the previous 12 months was 0.47 mg/L. This is 52.8% of the Derived Concentration Guide (DOE Order 5400.5) for ingested water.

There was no discharge from the Storm Water Retention Basin Spillway (Outfall 1lo00004002) to Paddy's Run via the Storm Sewer Outfall Ditch in January 1994. Based on 2.86 inches of rainfall in January 1994, the total quantity of uranium discharged to Paddy's Run from uncontrolled areas of the FEMP is estimated to be 8.13 kilograms.

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EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: 1IO00004001
001 Total Discharge
Manhole 175 (Effluent to Great Miami River)

DATE: JANUARY 1994

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (mg/l)	Total U (kgs)	Calculated Total U-238 (pCi/l) (1)
1	0.217	81	99	0.20	0.16	68
2	0.205	95	99	0.19	0.15	64
3	0.770	261	180	0.46	1.34	155
4	1.462	329	*	0.50	2.77	169
5	1.322	410	*	0.50	2.50	169
6	1.413	270	*	0.46	2.46	155
7	1.355	423	*	0.48	2.46	162
8	0.854	342	*	0.49	1.58	166
9	0.241	14	*	0.04	0.03	13
10	0.278	*	*	0.03	0.03	11
11	0.345	*	*	0.04	0.05	14
12	0.265	*	*	0.08	0.08	27
13	0.306	*	*	0.05	0.05	16
14	0.311	*	*	0.03	0.03	9
15	0.229	*	*	0.02	0.02	7
16	0.197	*	*	***	***	***
17	0.268	*	*	0.02	0.02	7
18	0.311	*	*	0.03	0.03	9
19	0.289	*	*	0.05	0.06	18
20	0.349	*	*	0.05	0.07	18
21	0.396	*	*	0.26	0.39	88
22	0.365	*	*	0.35	0.48	118
23	0.413	*	*	0.32	0.50	108
24	0.443	*	*	0.21	0.35	71
25	1.350	*	*	0.44	2.25	149
26	1.568	*	*	0.59	3.50	199
27	1.600	*	*	0.51	3.09	172
28	1.820	*	*	0.35	2.41	118
29	1.756	*	*	0.60	3.99	203
30	1.496	*	*	0.59	3.34	199
31	1.517	*	*	0.53	3.04	179
Total	23.711				37.25	

* Analytical results not yet available.
*** Sample not collected due to extremely cold weather.

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Period Ending January 31, 1994

EFFLUENT RADIATION REPORT (cont.)

FACILITY: Fernald Environmental Management Project

LOCATION: 001 Total Discharge

DATE: JANUARY 1994

	Flow (MGD)	Total Alpha (pCi/l)(2)	Total Beta (pCi/l)(2)	Total U (mg/l)(2)	Total U (kgs)	Calculated Total U-238 (pCi/l)(1)(2)
Avg.	0.765	106	8	0.42	1.20	140
Max.	1.820	423	180	0.60	3.99	203
Min.	0.197	14	99	0.02	0.02	7

The average uranium concentration for the previous twelve months was 0.47 mg/l. This is 52.8 percent of the Derived Concentration Guide(DOE Order 5400.5) for ingested water.

Comments: (1) The activity of this discharge has been and will continue to be reported as Uranium-238 (pCi/l) in accordance with the Ohio EPA format for reporting uranium. Since this does not account for the activity of the other uranium isotopes in the effluent, the total uranium data is also presented. The calculated total U-238 is based on a conversion factor of 337.84 pCi U-238/mg Total U applied to the measured value of total uranium.

(2) Average values presented are flow-weighted.

CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT

Period Ending January 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: 1IO00004002
002 Discharge (Overflow) to Storm Sewer Outfall Ditch
Storm Water Retention Basin Spillway (Effluent to Paddy's Run)

DATE: JANUARY 1994

There was no discharge to Paddy's Run from Storm Water Retention Basin.

Based on 2.86 inches of rainfall for the month, the uranium discharge to Paddy's Run from uncontrolled areas of the FEMP is estimated to be 8.13 kgs.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS MONTHLY PROGRESS REPORT

PERIOD ENDING JANUARY 31, 1994

ENCLOSURE B

FFCA: INITIAL REMEDIAL MEASURES

AND OTHER OPEN ACTIONS

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CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS MONTHLY PROGRESS REPORT

Period Ending January 31, 1994

INTRODUCTION

Enclosure B describes actions undertaken at the FEMP during the period January 1 through January 31, 1994, that are not covered by the reporting requirements of the Consent Agreement As Amended under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Sections 120 and 106(a).

WORK ASSIGNMENTS AND PROGRESS

Descriptions of ongoing work progress are presented in the following sections of this report. The status of ongoing work in support of the Federal Facility Compliance Agreement (FFCA) is summarized in Table 1 of Enclosure B. Completed work previously reported upon has been eliminated for the sake of brevity. In this portion of the report and in Table 1, descriptions of actions are presented in a format consistent with that of the FFCA.

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT (CERCLA)

1. Initial Remedial Measures

   Section C

   K-65 Silo Project - Status information on the K-65 Silo project normally reported in this section is being provided under Operable Unit 4: Silos 1-4.

2. Remedial Investigation/Feasibility Study (RI/FS)

   Status information on the Remedial Investigation/Feasibility Study (RI/FS) normally reported in this section is being provided separately in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA Sections 120 and 106(a).

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS MONTHLY PROGRESS REPORT

Period Ending January 31, 1994

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT (CERCLA)

3. Reports and Record Keeping

Section B

The RI/FS Monthly Technical Progress Report for December 1993 was transmitted to the U.S. EPA on January 20, 1994, as an integral part of the Consolidated Consent Agreement/Federal Facility Compliance Agreement/Federal Facility Agreement for Control and Abatement of Radon-222 Emissions (CA/FFCA/FFA-CARE) Monthly Progress Report in accordance with the requirements of Section X of the Consent Agreement As Amended.

CLEAN AIR ACT (CAA)

Section E

The Quarterly Particulate Emissions Report will now be incorporated into the Annual NESHAP Compliance Report.

RADIATION DISCHARGE INFORMATION

Section A

This information will now be submitted on an annual basis as part of the FEMP Annual Site Environmental Report.

REPORTING REQUIREMENTS

Section B

The Federal Facility Compliance Agreement Monthly Progress Report for December 1993, was transmitted to the U.S. EPA on January 20, 1994, as Enclosure B of the Consolidated Consent Agreement/Federal Facility Compliance Agreement/Federal Facility Agreement for Control and Abatement of Radon-222 Emissions (CA/FFCA/FFA-CARE) Monthly Progress Report.

TABLE 1

STATUS OF ASSIGNMENTS FOR WORK REQUIRED ON FEDERAL FACILITY COMPLIANCE AGREEMENT ACTIONS

NOVEMBER 30, 1993

ACTION	DESCRIPTION	COMPLETION TIME AFTER FFCA SIGNED	FY1994 STATUS
CERCLA			
1.	INITIAL REMEDIAL MEASURES		
1.C	Implement radon control plan approved by the U.S. EPA.	-----	No longer applicable. Progress on actions to address radon emissions from the K-65 Silos are being reported separately under Section IX-Removal Actions of the Consent Agreement/FFCA Monthly Progress Report.
2.	REMEDIAL INVESTIGATION/FEASIBILITY STUDY		No action required.
2.A	RI/FS work is to be conducted in accordance with the U.S. EPA guidelines.	N/A	
2.B	--No Action Required--	-----	Status information on the RI/FS is being reported in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA Sections 120 and 106(a).
2.E	Amend and submit revised RI/FS Work Plan to U.S. EPA if deficiencies are found.		Status information on the RI/FS is being reported in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA Sections 120 and 106(a).
2.F	Implement tasks described in the approved RI/FS Work Plan		Status information on the RI/FS is being reported in accordance with the requirements of Section X of the Consent Agreement As Amended under CERCLA sections 120 and 106(a).
3.	REPORTS AND RECORD KEEPING		
3.B	Submit monthly RI/FS progress reports.	monthly	The RI/FS Monthly Progress Report for December 1993 was transmitted to the U.S. EPA on January 20, 1994.
CLEAN AIR ACT			
B.4	Prepare annual progress report installation and replacement of emission control devices.	yearly	The Fifth Annual Progress Report on the installation and replacement of emission control devices was transmitted to the U.S. EPA on March 9, 1993 (DOE-1305-93).

STATUS OF ASSIGNMENTS FOR WORK REQUIRED ON FEDERAL FACILITY COMPLIANCE AGREEMENT ACTIONS

NOVEMBER 30, 1993

C.	Provide annual reports to the U.S. EPA per 40 CFR 61.94(c).	yearly	The Annual NESHAP Compliance Report for CY1992 was transmitted to the U.S. EPA on June 28, 1993 (DOE-2281-93).
D.1	Provide U.S. EPA with yearly stack-testing schedule.	yearly	No stacks related to production were operating in 1993. Periodic confirmatory measurements to demonstrate compliance with NESHAP Subpart H were conducted on three laboratory exhaust stacks. These tests were conducted in accordance with a program to verify low emissions from stacks without continuous in-stack monitoring. Due to the permanent shutdown of metals production, resumption of the FFCA Stack Testing Program is unlikely. A proposal is being developed to substitute the NESHAP Subpart H testing/monitoring program for the FFCA Stack Testing. When this proposal is completed it will be formally submitted to U.S. EPA.
D.2	Provide U.S. EPA with stack-test results for stacks tested that year.	45 days	No stacks related to production were operated or tested in 1993.
E.1	Maintain records of monthly particulate matter emissions.	-----	Ongoing.
E.2	Provide quarterly reports to U.S. EPA on these emissions.	-----	The Quarterly Particulate Emissions Report will now be incorporated into the Annual NESHAP Compliance Report.
RCRA			
A.1	Conduct a hazardous waste determination on all waste streams.	30 days	Complete. Pursuant to the Proposed Amended Consent Decree, a RCRA waste evaluation was conducted on all identified waste streams pertaining to the PACD.
A.2	Commence a hazardous waste analysis program for materials in the landfill and going to the incinerator.	30 days	Complete. Operation of these units was discontinued and data on the waste which had gone to them was provided in a 30-day FFCA deliverable on August 17, 1986.
A.5	Update the facility closure plan to reflect the year the facility expects to begin closure.	30 days	The Facility closure date is dependent upon closure schedules for individual TSD units as presented most recently in Section I of the RCRA Part B Permit Application transmitted to the Ohio EPA and the U.S. EPA on March 26, 1993 (DOE-1471-93). Facility closure will be completed on a date the last TSD unit is closed.

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TABLE 1

STATUS OF ASSIGNMENTS FOR WORK REQUIRED ON FEDERAL FACILITY COMPLIANCE AGREEMENT ACTIONS

NOVEMBER 30, 1993

RADIATION DISCHARGE INFORMATION			
A.3	Report to U.S. EPA, Ohio EPA and Ohio Department of Health the results of the continuous liquid discharge samples.	yearly	The twenty-first Quarterly Discharge Report for the period October through December 1991 was transmitted to the U.S. EPA on February 20, 1992 (DOE-941-92). This information will now be reported on an annual basis.
REPORTING REQUIREMENTS			
B.	Issue monthly progress report of actions taken to ensure compliance with FFCA requirements.	monthly	December's FFCA Monthly Progress Report was transmitted to the U.S. EPA on January 20, 1994.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS MONTHLY PROGRESS REPORT

PERIOD ENDING JANUARY 31, 1994

ENCLOSURE C

FEDERAL FACILITY AGREEMENT:
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS

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CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS MONTHLY PROGRESS REPORT

Period Ending January 31, 1994

Introduction

The Federal Facility Agreement for Control and Abatement of Radon-222 Emissions (FFA-CARE) between the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (U.S. EPA), signed November 19, 1991, requires that a monthly report be submitted to the U.S. EPA regarding all steps undertaken in the preceding month to implement Part V of the agreement and that all data generated as a result of those actions be submitted.

Enclosure C fulfills those requirements by describing steps taken at the FEMP during the period January 1, through January 31, 1994, to implement Part V, Radon-222 Control and Abatement Plan, paragraphs 19-33 of the FFA-CARE.

After four months of data collection for the applicable parameters, preparation is now underway to evaluate the data for use in the Transport Release Models.

Work Assignments and Progress

In this section of Enclosure C, action descriptions and work progress are presented in a format consistent with that of the FFA-CARE. Immediately following this section are the K-65 Silos Report and the Selected Radon Data Report. Reporting this data is also a requirement included in the U.S. EPA approved Silos 1 and 2 Removal Action Work Plan (Removal Action No. 4).

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS MONTHLY PROGRESS REPORT

Period Ending January 31, 1994

FFA Part, Paragraph(s)	Description of Commitment	FFA Due Date	Status of Commitment
Part V, 19 & 21	Implement the K-65 Silos 1 and 2 Removal Action in accordance with the approved Silos 1 and 2 Removal Action Work Plan.	12/1/91	Completed. Installation of the bentonite completed 11/28/91.
Part V, 20	Reduce radon-222 to a level As-Low-As Reasonably-Achievable (ALARA) with the goal as specified in the Silos 1 and 2 Removal Action Work Plan.	5/22/92	Completed. Concentrations off-site remain well below performance goal of removal action.
Part V, 22	Submit proposed methodology for estimating radon-222 concentration reductions resulting from completion of the Silos 1 and 2 Removal Action.	Within 60 days of completing removal action; 1/27/92.	The Bentonite Effectiveness Environmental Monitoring Plan was resubmitted to the U.S. EPA for comment and approval on 3/13/92. EPA approval was received on 4/24/92. DOE has prepared a revision to the methodology. Comment responses to the U.S. EPA's disapproval of the revised methodology is under way. Applicable information contained in this revised methodology will be included in the final report, which is now being prepared.

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FFA Part, Paragraph(s)	Description of Commitment	FFA Due Date	Status of Commitment
Part V, 23	Evaluate performance of the removal action and determine whether or not additional actions are needed prior to final remediation.	None specified.	Methodology for estimating radon-222 concentration reduction submitted to U.S. EPA per paragraph 20 of Part V. The first Bentonite Effectiveness Environmental Monitoring Report was issued to the U.S. EPA on 5/22/92. DOE submitted a revision to the methodology to the U.S. EPA on 12/17/92. Comment responses to the U.S. EPA's disapproval of the revised methodology is under way. Applicable information contained in this revised methodology will be included in the final report, which is now being prepared.
Part V, 24, 25, and 33	Demonstrate compliance with NESHAP Subpart Q at the completion of final remediation using a methodology approved by the U.S. EPA. Applicable to: Silos 1, 2, and 3; Waste Pits 1, 2, 3, 4, and 5 and the Clearwell; and any newly discovered radon-222 emission sources.	None specified.	No information to report for January 1994.
Part V, 26	Directly measure radon-222 flux from Waste Pits 1, 2, 3, 4, and 5 and the Clearwell in the RI/FS under the CERCLA Consent Agreement.	None specified.	Radon sampling is complete for Pits 1, 2, and 3. All measurements were below the criteria set by the U.S. EPA. A final report was issued to the U.S. EPA on 6/25/92. A letter was received from the U.S. EPA on 10/16/92 giving approval of the proposed method for measuring the radon flux from Pit 4. The letter also stated that since the Clearwell is water covered, and Pit 5 is nearly 100% water covered, the flux from Pit 5 and the Clearwell may be assumed to be zero.
Part V, 26	Include direct measurement data from Waste Pits 1, 2, 3, 4, and 5 and the Clearwell in the RI/FS under the CERCLA Consent Agreement.	None specified.	See above.

FFA Part, Paragraph(s)	Description of Commitment	FFA Due Date	Status of Commitment
Part V, 27	Estimate radon-222 emissions from Silo 3 based upon characterization data; include the estimated radon-222 emission data from Silo 3 in the RI/FS that includes Silo 3 under the CERCLA Consent Agreement.	None specified.	Completed. An estimate of radon flux from the K-65 Silo 3 was submitted to the U.S. EPA on 12/17/91. Radon flux for the silo was estimated to be above 20 pCi/m^2-s.
Part V, 28	Submit documentation or estimates of current radon-222 emissions from existing but newly discovered sources that contain radium-226 in sufficient concentrations to emit radon-222 in excess of NESHAP Subpart Q prior to final remediation.	Within 30 days of discovery.	No new sources identified.
Part V, 30	Submit methodology for direct measurement or other appropriate means of characterization of the relevant emissions pursuant to paragraph 29 of the FFA.	Within 45 days of the U.S. EPA response pursuant to paragraph 29.	None required.
Part V, 31	Submit results of measurements pursuant to paragraph 30.	Within 30 days of U.S. EPA approval of characteriz ation method.	None required.
Part VI, 31	Submit monthly report on steps undertaken to implement Part V of the FFA-CARE and the data obtained in the preceding month.	20th day of succeeding month.	The progress report being submitted herewith as an integral part of the CERCLA Consent Agreement Monthly Progress Report.

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CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS MONTHLY PROGRESS REPORT

Period Ending January 31, 1994

Data Reporting Requirements: RA No. 4: Silos 1 and 2

As defined in the Silos 1 and 2 Removal Action Work Plan and the Federal Facility Agreement, data associated with monitoring the effectiveness of the bentonite installation are included in the following tables: the K-65 Silos Report and the Selected Radon Data Report.

The K-65 Silos Report includes data on the following parameters:

- Ambient temperature and pressure near the silos.
- Silos 1 and 2 headspace temperature.
- Silos 1 and 2 differential pressure.
- Silos 1 and 2 radon headspace concentration.
- Silos 1 and 2 headspace humidity

The Selected Radon Data Report includes radon data from the following locations:

- Air monitoring station number 5 (AMS-5)
- Air monitoring station number 6 (AMS-6)
- Pilot Plant
- Background data
- K-65 Monitoring Data (K-65 NW, K-65 SW, K-65 NE, K-65 SE).

The radon data submitted in Enclosure C: Radon Data for the K-65 Removal Action and in all previous consent agreement status updates is considered to be draft. The radon data, although collected by qualified technicians using detailed procedures, was not obtained in a manner which would withstand a rigorous validation process. The various field and laboratory procedures are currently being reviewed and modified to be in accordance with the conditionally approved Site-Wide CERCLA Quality Assurance Project Plan (SCQ). Once the sampling and analysis procedures have been modified and approved, along with specific validation protocols, suspect radon data will either be qualified or rejected.

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CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/ FEDERAL FACILITY AGREEMENT MONTHLY PROGRESS REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O. Box 398704
Cincinnati, Ohio 45239 Hamilton

K-65 SILO REPORT
RADON CONCENTRATIONS

MONTH: January, 1994 REPORT GENERATED: 02/01/94

Daily Summary of Recorded Headspace Concentrations
(recorded at 5 minute intervals)

	SILO 1				SILO 2			
Date	Average	Maximum	Minimum	Std. Dev.	Average	Maximum	Minimum	Std. Dev.
01/01/94	324,000	863,000	41,000	246,000	2,817,000	3,723,000	1,257,000	636,000
01/02/94	232,000	807,000	55,000	183,000	3,286,000	3,627,000	2,478,000	204,000
01/03/94	123,000	669,000	44,000	93,000	3,042,000	3,508,000	2,358,000	236,000
01/04/94	81,000	495,000	23,000	78,000	2,830,000	3,316,000	2,358,000	173,000
01/05/94	336,000	883,000	65,000	250,000	3,119,000	3,604,000	1,975,000	522,000
01/06/94	558,000	1,065,000	179,000	239,000	3,469,000	3,580,000	2,454,000	71,000
01/07/94	203,000	957,000	40,000	207,000	3,080,000	3,484,000	2,478,000	302,000
01/08/94	121,000	246,000	33,000	54,000	2,609,000	3,053,000	2,023,000	262,000
01/09/94	168,000	586,000	68,000	85,000	2,955,000	3,316,000	2,622,000	168,000
01/10/94	338,000	833,000	100,000	217,000	3,106,000	3,532,000	2,119,000	298,000
01/11/94	276,000	790,000	38,000	213,000	3,296,000	3,556,000	2,550,000	243,000
01/12/94	489,000	1,011,000	84,000	282,000	3,346,000	3,436,000	3,244,000	47,000
01/13/94	257,000	1,139,000	65,000	276,000	3,171,000	3,316,000	2,670,000	119,000
01/14/94	87,000	226,000	30,000	43,000	2,615,000	3,220,000	2,167,000	223,000
01/15/94	163,000	630,000	59,000	73,000	2,373,000	2,670,000	2,095,000	119,000
01/16/94	562,000	1,095,000	169,000	257,000	2,802,000	3,220,000	2,047,000	233,000
01/17/94	458,000	1,231,000	20,000	443,000	2,573,000	3,412,000	1,496,000	614,000
01/18/94	223,000	869,000	34,000	208,000	1,813,000	4,106,000	1,449,000	289,000
@ 01/19/94	257,000	1,234,000	29,000	252,000	2,276,000	4,920,000	898,000	648,000
01/20/94	135,000	604,000	34,000	108,000	1,755,000	2,981,000	850,000	639,000
01/21/94	232,000	832,000	50,000	209,000	1,573,000	3,364,000	98,000	1,031,000
01/22/94	354,000	1,018,000	47,000	275,000	2,623,000	3,484,000	1,664,000	615,000
01/23/94	284,000	871,000	51,000	224,000	3,184,000	3,556,000	2,574,000	186,000
01/24/94	347,000	906,000	59,000	255,000	3,496,000	3,747,000	3,149,000	133,000
01/25/94	673,000	1,202,000	65,000	338,000	3,628,000	3,747,000	3,244,000	72,000
01/26/94	30,000	124,000	7,000	16,000	3,135,000	3,604,000	2,574,000	217,000
01/27/94	730,000	1,231,000	37,000	352,000	3,250,000	3,388,000	2,646,000	122,000
01/28/94	360,000	1,232,000	4,000	515,000	2,561,000	3,340,000	1,592,000	515,000
01/29/94	6,000	34,000	4,000	5,000	2,728,000	3,077,000	2,023,000	229,000
01/30/94	6,000	33,000	3,000	4,000	2,764,000	3,173,000	2,215,000	201,000
01/31/94	49,000	298,000	4,000	61,000	2,624,000	3,244,000	1,616,000	468,000

Grab Samples of Headspace

Date	SILO 1 Concentration	SILO 2 Concentration
01/03/94	439,000	2,028,000
01/06/94	1,153,000	4,155,000
01/10/94	1,211,000	5,108,000
01/13/94	126,000	4,582,000
01/24/94	130,000	4,799,000
01/28/94	NO SAMPLE	3,845,000
01/31/94	NO SAMPLE	4,047,000

Notes: 1. All values reported to the nearest thousand pCi/L to remain consistent with the precision of the calibration source.
@ Data editted due to instument malfunction during period of extreme cold weather (-20 deg. F).

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CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITIES COMPLIANCE AGREEMENT/ FEDERAL FACILITY AGREEMENT MONTHLY PROGRESS REPORT

MONTH: JANUARY
YEAR: 94

FACILITY: Fernald Environmental Management Report
U.S. Department of Energy
7400 Willey Road, P.O. Box 398704
Cincinnati, Ohio 45239 Hamilton

SELECTED RADON DATA REPORT

(Monthly Summary of Selected Sampling Locations)

Daily Averages:	AMS-6 (pCi/L)	AMS-6 (pCi/L)	PILOT PLANT (pCi/L)	BKGD (pCi/L)
01/01/94	0.5	0.6	(b)	1.4
01/02/94	0.6	0.7	(b)	1.5
01/03/94	0.5	0.6	0.2 (b)	1.4
01/04/94	0.5	0.5	0.5	1.4
01/05/94	0.4	0.6	0.4	1.4
01/06/94	0.7	0.7	0.5	1.4
01/07/94	0.6	0.7	0.6	1.5
01/08/94	0.5	0.8	0.5	1.7
01/09/94	0.8	0.9	0.6	1.6
01/10/94	0.7	0.7	0.6	1.5
01/11/94	0.5	0.7	0.5	1.4
01/12/94	0.5	0.7	0.5	1.5
01/13/94	0.4	0.5	0.6	1.4
01/14/94	0.6	0.6	0.5	1.7
01/15/94	1.2 (a)	1.2	0.6	3.0
01/16/94	0.6	0.7	0.6	2.2
01/17/94	0.5	0.7	0.5	1.6
01/18/94	0.5 (a)	0.7 (a)	0.6 (b)	1.7 (a)
01/19/94	0.5 (a)	0.5 (a)	(b)	1.1 (a)
01/20/94	0.8 (a)	0.7	(b)	1.8
01/21/94	0.3 (a)	1.4	(b)	2.7
01/22/94	0.6	0.6	(b)	1.5
01/23/94	0.4	0.5	(b)	1.3
01/24/94	0.4	0.5	0.3 (b)	1.3
01/25/94	1.1	0.9	0.7	1.4
01/26/94	0.4	0.6	0.4	1.3
01/27/94	0.5	0.7	0.5	1.4
01/28/94	0.4	0.5	0.5	1.3
01/29/94	0.3	0.5	0.5	1.3
01/30/94	0.4	0.5	0.4	1.3
01/31/94	0.5	0.5	0.5	1.4

Monthly Averages:	AMS-6 (pCi/L)	AMS-6 (pCi/L)	PILOT PLANT (pCi/L)	BKGD (pCi/L)
AVERAGE:	0.5	0.7	0.5	1.6
MAXIMUM:	1.2	1.4	0.7	3.0
MINIMUM:	0.3	0.5	0.2	1.1
MEDIAN:	0.5	0.7	0.5	1.4
STD. DEV.:	0.2	0.2	0.1	0.4

STANDARD LEGEND:

1. "(a)" indicates censored data due to erroneous readings.
2. "(b)" indicates data loss due to monitor malfunction.
3. "(c)" indicates operator error in programming monitor.
4. "(d)" indicates data loss due to relocation of monitor.

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CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITIES COMPLIANCE AGREEMENT/ FEDERAL FACILITY AGREEMENT MONTHLY PROGRESS REPORT

MONTH: JANUARY
YEAR: 94

FACILITY: Fernald Environmental Management Report
U.S. Department of Energy
7400 Willey Road, P O. Box 398704
Cincinnati, Ohio 45239. Hamilton

SELECTED RADON DATA REPORT

(Monthly Summary of Selected Sampling Locations)

Daily Averages:	K-65, NW (pCi/L)	K-65, SW (pCi/L)	K-65, NE (pCi/L)	K-65, SE (pCi/L)
01/01/94	1.6	0.6	1.5	1.3
01/02/94	1.5	2.8	1.7	1.6
01/03/94	1.1	2.8	0.6	0.8
01/04/94	1.1	0.5	0.9	1.2
01/05/94	1.9	0.4	1.6	1.0
01/06/94	6.9	0.8	3.1	4.2
01/07/94	1.8	1.0	3.6	5.0
01/08/94	1.6	0.5	3.5	1.4
01/09/94	2.2	1.5	4.3	2.1
01/10/94	3.8	1.7	1.4	1.1
01/11/94	1.9	6.2	1.8	1.6
01/12/94	4.7	5.7	6.8	4.6
01/13/94	1.1	0.9	11.5	3.6
01/14/94	1.3 (a)	0.5	2.4	2.0
01/15/94	1.3 (a)	0.8	1.7 (a)	2.2
01/16/94	2.4 (a)	1.1	0.5 (a)	1.6
01/17/94	1.4 (a)	0.8	1.8 (a)	1.6
01/18/94	(a)	0.7 (a)	(a)	3.4 (a)
01/19/94	(a)	0.4 (a)	1.0 (a)	0.7 (a)
01/20/94	0.8 (a)	2.8	1.5 (a)	2.0
01/21/94	0.9 (a)	0.4 (a)	1.3 (a)	1.9 (a)
01/22/94	2.3 (a)	0.9	1.1 (b)	1.2
01/23/94	1.2	0.4	1.3	0.7
01/24/94	1.1	0.6	1.2	1.0
01/25/94	4.6	2.4	3.1	2.7
01/26/94	1.1	5.1	0.5	0.7
01/27/94	12.9	3.9	0.6	1.5
01/28/94	1.6	0.5	1.6	0.8
01/29/94	1.0	0.4	1.9	1.3
01/30/94	1.1	1.0	0.6	0.8
01/31/94	1.6	1.2	2.2	2.6

Monthly Averages:	K-65, NW (pCi/L)	K-65, SW (pCi/L)	K-65, NE (pCi/L)	K-65, SE (pCi/L)
AVERAGE:	2.3	1.6	2.2	1.9
MAXIMUM:	12.9	6.2	11.5	5.0
MINIMUM:	0.8	0.4	0.5	0.7
MEDIAN:	1.6	0.9	1.6	1.6
STD. DEV.:	2.4	1.6	2.2	1.2

STANDARD LEGEND:

1. "(a)" indicates censored data due to erroneous readings.
2. "(b)" indicates data loss due to monitor malfunction.
3. "(c)" indicates operator error in programming monitor.
4. "(d)" indicates data loss due to relocation of monitor.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/
FEDERAL FACILITY AGREEMENT MONTHLY PROGRESS REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O. Box 398704
Cincinnati, Ohio 45239 Hamilton

K-65 SILO REPORT

LOCATION: Silo # 1 DATE: January 1994

Day	Ambient Temp °F	Ambient Press In. Hg.	Temperature Head Space °F	Inter. Hum. %	Diff. Press In. HG	Head Space Radon (pCi/l)
1	31.3	29.41	39.1	*	-0.009	323,537
2	30.4	29.46	39.6	*	-0.009	232,321
3	29.0	29.27	39.7	*	-0.009	123,329
4	20.9	29.23	39.6	*	-0.012	81,349
5	24.1	29.52	39.4	*	-0.010	336,003
6	31.5	29.25	39.4	*	-0.009	557,516
7	25.6	29.35	39.6	*	-0.011	203,012
8	7.6	29.68	38.8	*	-0.012	121,346
9	13.6	29.93	37.4	*	-0.011	168,217
10	23.7	29.89	36.9	*	-0.010	337,984
11	35.4	29.75	37.5	*	-0.008	276,107
** 12	32.5	29.51	38.1	*	-0.067	489,471
13	29.7	29.31	38.4	*	0.002	256,846
14	10.6	29.39	38.1	*	-0.012	87,179
15	-5.8	29.82	36.5	*	-0.013	162,733
16	1.2	29.87	34.6	*	-0.011	561,650
17	14.5	29.48	34.8	*	-0.012	458,223
*** 18	-12.6	29.93	35.0	*	-0.013	222,774
*** 19	-5.3	30.15	34.3	*	-0.012	685,920
20	2.2	30.08	34.0	*	-0.011	135,437
*** 21	6.3	30.06	34.2	*	-0.010	232,132
22	20.1	29.79	34.2	*	-0.008	354,461
23	33.8	29.54	34.8	*	-0.006	284,205
24	34.5	29.60	35.3	*	-0.006	347,108
** 25	33.7	29.51	35.8	*	-0.027	672,643
** 26	24.9	29.65	36.0	*	0.113	29,645
** 27	37.4	29.40	36.0	*	-0.071	729,710
** 28	36.9	29.16	36.9	*	0.023	359,793
29	25.3	29.52	36.9	*	0.050	6,000
** 30	26.4	29.65	36.6	*	-0.017	6,395
31	18.6	29.67	36.3	*	-0.009	48,775
ARITHMETIC MEAN	20.6	29.61	36.9	*	-0.007	286,633
MAXIMUM	37.4	30.15	39.7	*	0.113	729,710
MINIMUM	-12.6	29.16	34.0	*	-0.071	6,000
MEDIAN	24.9	29.54	36.9	*	-0.010	256,846

Note: * - Silo #1 Relative Humidity was inoperable, default value = 0.
** - Some Delta Pressure values were outside of range restrictions.
*** - Some Ambient Air Temperature values were outside of range restrictions.

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CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/
FEDERAL FACILITY AGREEMENT MONTHLY PROGRESS REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O. Box 398704
Cincinnati, Ohio 45239 Hamilton

K-65 SILO REPORT

LOCATION: Silo # 2 DATE: January 1994

Day	Ambient Temp °F	Ambient Press In. Hg.	Temperature Head Space °F	Inter. Hum. %	Diff. Press In. HG	Head Space Radon (pCi/l)
1	31.3	29.41	39.9	97.1	-0.006	2,817,475
2	30.4	29.46	40.2	97.0	-0.005	3,285,627
3	29.0	29.27	40.4	97.0	-0.006	3,041,782
4	20.9	29.23	40.3	97.0	-0.005	2,829,946
5	24.1	29.52	40.0	97.0	-0.004	3,119,433
6	31.5	29.25	40.0	96.3	-0.003	3,469,278
7	25.6	29.35	40.1	95.0	-0.004	3,080,441
8	7.6	29.68	39.4	95.0	-0.005	2,608,964
9	13.6	29.93	38.4	95.0	-0.004	2,954,653
10	23.7	29.89	38.1	95.0	-0.004	3,106,048
11	35.4	29.75	38.5	94.3	-0.004	3,295,686
12	32.5	29.51	38.9	94.0	-0.002	3,345,570
13	29.7	29.31	39.2	94.0	-0.004	3,170,896
14	10.6	29.39	38.9	94.1	-0.005	2,615,282
15	-5.8	29.82	37.6	94.5	-0.003	2,372,518
16	1.2	29.87	36.1	94.5	-0.002	2,802,343
17	14.5	29.48	36.2	94.0	-0.004	2,572,549
*** 18	-12.6	29.93	36.3	94.3	-0.003	1,813,413
*** 19	-5.3	30.15	35.7	94.3	-0.001	12,755,165
20	2.2	30.08	35.4	94.1	-0.002	1,755,300
*** 21	6.3	30.06	35.5	94.1	-0.002	1,572,695
22	20.1	29.79	35.5	94.0	-0.003	2,623,098
23	33.8	29.54	36.0	94.0	-0.005	3,184,447
24	34.5	29.60	36.4	94.0	-0.004	3,495,634
25	33.7	29.51	36.9	94.0	-0.015	3,628,240
** 26	24.9	29.65	37.0	94.0	0.085	3,135,146
** 27	37.4	29.40	37.0	93.7	-0.073	3,249,545
** 28	36.9	29.16	37.9	93.1	0.028	2,561,159
** 29	25.3	29.52	37.8	93.3	-0.003	2,727,768
30	26.4	29.65	37.5	93.1	-0.004	2,764,266
31	18.6	29.67	37.3	93.2	-0.004	2,623,846
ARITHMETIC MEAN	20.6	29.61	37.9	94.6	-0.003	3,173,491
MAXIMUM	37.4	30.15	40.4	97.1	0.085	12,755,165
MINIMUM	-12.6	29.16	35.4	93.1	-0.073	1,572,695
MEDIAN	24.9	29.54	37.8	94.1	-0.004	2,954,653

Note: ** - Some Delta Pressure values were outside of range restrictions.
*** - Some Ambient Air Temperature values were outside of range restrictions.

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS MONTHLY PROGRESS REPORT

PERIOD ENDING JANUARY 31, 1994

ENCLOSURE D

DRILLING/BORING LOGS

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No Borings Conducted for the Period Ending January 1994

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS MONTHLY PROGRESS REPORT

PERIOD ENDING JANUARY 31, 1994

ENCLOSURE E

EFFLUENT RADIATION DISCHARGES TO THE GREAT MIAMI RIVER

CONSOLIDATED CONSENT AGREEMENT/FEDERAL FACILITY COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS MONTHLY PROGRESS REPORT

Period Ending January 31, 1994

Introduction

Enclosure E lists monthly discharges to the Great Miami River. This information is required by the DOE/U.S. EPA Agreement Resolving Dispute Concerning Denial of Request for Extension of Time to Submit Operable Unit 2 Document and discussed in the "Addendum No. 1 to the South Groundwater Contamination Plume Removal Action Parts 2 and 3 Work Plan."

CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT

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Period Ending January 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: [SP1]
IAWWT (SWRB) Discharge
Interim Advanced Waste Water Treatment Effluent

DATE: DECEMBER 1993

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (ug/l)	Total U (kgs)	TSS (mg/l)	pH (MIN) (S.U.)	pH (MAX) (S.U.)
1	0.000							
2	0.000							
3	0.000							
4	0.000							
5	0.000							
6	0.000							
7	0.000							
8	0.000							
9	0.000							
10	0.000							
11	0.000							
12	0.000							
13	0.000							
14	0.000							
15	0.000							
16	0.125	2	5	1.7	0.0008	2.6	7.8	8.2
17	0.307	*	*	<1.0	0.0012	2.8	8.2	8.4
18	0.109	*	*	< 1.0	0.0004	4.6	8.2	8.4
19	0.000							
20	0.000							
21	0.000							
22	0.000							
23	0.000							
24	0.000							
25	0.000							
26	0.000							
27	0.000							
28	0.000							
29	0.000							
30	0.000							
31	0.000							
Total	0.541				0.0024			

* Sample not received by laboratory.

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CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT

Period Ending January 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: [606]
SWRB Pump Station Discharge
Storm Water Retention Basin Effluent

DATE: DECEMBER 1993

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (mg/l)	Total U (kgs)
1	AC				
2	0.336	284	149	0.36	0.46
3	1.021	302	113	0.36	1.39
4	1.034	297	131	0.36	1.41
5	1.079	306	108	0.40	1.63
6	1.048	369	239	0.44	1.74
7	1.038	270	149	0.49	1.92
8	0.564	338	149	0.54	1.15
9	0.284	369	167	0.60	0.64
10	1.066	324	203	0.62	2.50
11	1.023	320	216	0.62	2.40
12	0.396	455	176	0.63	0.94
13	AC				
14	AC				
15	AC				
16	0.125	311	230	0.52	0.25
17	0.307	360	189	0.51	0.59
18	0.109	324	158	0.48	0.20
19	AC				
20	AC				
21	AC				
22	AC				
23	AC				
24	AC				
25	AC				
26	AC				
27	AC				
28	AC				
29	AC				
30	AC				
31					
	9.430				17.23

AC: Storm water levels in retention basins not high enough to necessitate discharge.

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CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT

Period Ending January 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: [605]
Biodenitrification Tower
BDN Tower Effluent

DATE: DECEMBER 1993

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (mg/l)	Total U (kgs)	C-BOD5 (mg/l)	TSS (mg/l)	NH3-N (mg/l)
1	0.080	68	212	0.09	0.03			
2	0.084	99	207	0.17	0.05			
3	0.082	81	113	0.14	0.04			
4	0.089	< 27	77	0.01	0.00			
5	0.107	176	212	0.21	0.09		< 2*	< 0.10*
6	0.126	509	1266	0.91	0.43			
7	0.127	302	356	0.50	0.24	0.76		
8	0.118	419	486	0.72	0.32			
9	0.121	311	275	0.53	0.24			
10	0.128	18	135	0.01	0.00			
11	0.126	54	194	0.02	0.01			
12	0.114	14	135	0.01	0.01			
13	0.098	14	99	0.02	0.01		3	< 0.10*
14	0.101	131	302	0.31	0.12	0.82		
15	0.119	140	302	0.33	0.15			
16	0.127	185	293	0.37	0.18			
17	0.124	221	324	0.47	0.22			
18	0.130	185	360	0.40	0.20			
19	0.121	36	68	0.05	0.02			
20	0.128	63	225	0.11	0.05			
21	0.106	32	90	0.05	0.02	1.30	< 2*	< 0.10*
22	0.105	23	198	0.05	0.02			
23	0.077	27	248	0.03	0.01			
24	0.089	18	212	0.04	0.01			
25	0.070	36	171	0.05	0.01			
26	0.076	901	1036	1.50	0.43			
27	0.111	946	811	1.70	0.71		< 2*	< 0.10*
28	0.133	1036	991	2.00	1.01	1.41		
29	0.132	1126	991	2.00	1.00			
30	0.115	1036	991	2.00	0.87			
31	0.115	18	108	0.05	0.02			
Total	3.379				6.52			

*: Value is less than detectable limit.

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CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT

Period Ending January 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: [605]
Biodenitrification Tower
BDN Tower Effluent

DATE: DECEMBER 1993

Day	Flow (MGD)	NO3-N (mg/l)	Chromium (ug/l)	Copper (ug/l)	Nickel (ug/l)	Hex-Chrom (ug/l)
1	0.080					
2	0.084					
3	0.082					
4	0.089					
5	0.107	0.4	< 6.0*	< 14.0*	< 17.0*	<6.0*
6	0.126					
7	0.127					
8	0.118					
9	0.121					
10	0.128					
11	0.126					
12	0.114					
13	0.098	0.6	< 6.0*	< 14.0*	< 17.0*	<6.0*
14	0.101					
15	0.119					
16	0.127					
17	0.124					
18	0.130					
19	0.121					
20	0.128					
21	0.106	0.7	< 6.0*	< 14.0*	< 17.0*	<6.0*
22	0.105					
23	0.077					
24	0.089					
25	0.070					
26	0.076					
27	0.111	0.5	< 6.0*	< 14.0*	< 17.0*	<6.0*
28	0.133					
29	0.132					
30	0.115					
31	0.115					
Total	3.379					

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*: Value is less than detectable limit.

CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR 5168
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT

Period Ending January 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: [SP2]
Storm Water Retention Basin Emergency Bypass
SWRB Bypass Effluent

DATE: DECEMBER 1993

Day	Flow (MGD)
1	0.000
2	0.336
3	1.021
4	1.034
5	1.079
6	1.048
7	1.038
8	0.564
9	0.284
10	1.066
11	1.023
12	0.396
13	0.000
14	0.000
15	0.000
16	0.000
17	0.000
18	0.000
19	0.000
20	0.000
21	0.000
22	0.000
23	0.000
24	0.000
25	0.000
26	0.000
27	0.000
28	0.000
29	0.000
30	0.000
31	0.000
Total	8.889

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CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT

Period Ending January 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: [SP3]
SWRB Valve House
South Groundwater Contamination Plume

DATE: DECEMBER 1993

Day	Flow (MGD)	Total Alpha (pCi/l)	Total Beta (pCi/l)	Total U (ug/l)	Total U (kgs)	TSS (mg/l)	pH (Grab) (S.U.)
1	2.606	14	< 23	13	0.13		7.2
2	2.614	27	< 36	13	0.13	1.4	7.2
3	3.028	9	32	13	0.15		7.3
4	1.222	14	32	13	0.06		7.3
5	1.923	9	< 32	13	0.09		7.4
6	1.916	9	< 41	14	0.10		7.3
7	1.932	5	45	13	0.10		7.3
8	1.935	9	< 27	13	0.10		7.4
9	1.903	9	< 36	12	0.09	2.8	7.4
10	1.841	9	< 9	14	0.10		7.3
11	1.556	18	< 23	17	0.10		7.4
12	1.322	18	< 45	17	0.09		7.7
13	1.440	14	< 36	16	0.09		7.3
14	1.608	18	< 32	16	0.10		7.3
15	1.677	14	< 32	15	0.10		7.4
16	1.929	14	< 5	14	0.10	2.4	7.4
17	1.944	9	< 5	13	0.10		7.4
18	1.850	14	< 41	13	0.09		7.4
19	1.900	5	< 45	13	0.09		7.5
20	2.060	5	< 23	13	0.10		7.5
21	1.710	9	< 9	13	0.08		7.4
22	1.950	9	< 5	13	0.10		7.5
23	1.900	< 5	< 23	12	0.09	1.8	7.5
24	1.843	14	50	13	0.09		7.5
25	1.877	14	< 45	13	0.09		7.4
26	1.870	9	36	13	0.09		7.6
27	1.960	14	45	13	0.10		7.6
28	1.790	14	< 18	12	0.08		7.4
29	1.816	36	< 41	14	0.10		7.3
30	1.873	9	< 5	13	0.09	2.8	7.4
31	1.805	9	< 41	13	0.09		7.3
Total	58.600				2.98		

CONSOLIDATED CONSENT AGREEMENT FACILITY
COMPLIANCE AGREEMENT/FEDERAL FACILITY AGREEMENT FOR
CONTROL AND ABATEMENT OF RADON-222 EMISSIONS
MONTHLY PROGRESS REPORT

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Period Ending January 31, 1994

EFFLUENT RADIATION REPORT

FACILITY: Fernald Environmental Management Project
U.S. Department of Energy
7400 Willey Road, P.O.Box 398705
Cincinnati, Ohio 45239-8705
9002 M 9501 900212

LOCATION: [SP4]
Parshall Flume
Effluent Downstream of Manhole 1768

DATE: DECEMBER 1993

Day	DO (mg/l)	IRON (mg/l)	MANGANESE (mg/l)
1			
2	9.7	0.96	0.1
3			
4			
5			
6			
7			
8			
9	10.0	0.56	0.2
10			
11			
12			
13			
14			
15			
16	10.9	0.61	0.1
17			
18			
19			
20			
21			
22			
23	11.8	0.39	0.1
24			
25			
26			
27			
28			
29			
30	10.3	1.03	0.2
31			